CULTURAL MODELS, PREGNANCY, AND STRESS:
EXAMINING INTRACULTURAL VARIATION
IN JALISCO, MEXICO

by
MEREDITH ANN JACKSON

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in
the Department of Anthropology in the
School of Arts and Sciences of
the University of Alabama

TUSCALOOSA, ALABAMA

2009
ABSTRACT

The purpose of this research was to use cultural domain analysis (n=73) to determine if one or more shared models of a good pregnancy exist in Jalisco, Mexico, and to use cultural consonance analysis (n=88) to statistically determine the association between a woman’s ability to approximate the shared model and maternal psychosocial and physiological health. Jalisco has a pluralistic reproductive health care system, including midwives and medical doctors, and widely varying sites with differential access to biomedical and traditional health care. In an effort to capture intracultural variability, the research was conducted in an urban area, a semi-urban city, rural municipal seats, small towns, and villages. I predicted that women who are more consonant with the specified model will have lower levels of psychosocial stress and altered immune response, and that social support moderates these relationships.

Anthropologists have studied the effects of culture change and stress using both psychosocial and physiological markers, and have employed cultural domain analysis to build models based on informant knowledge and information. Intracultural variation in consonance with the models is associated with stress. Furthermore, psychosocial and physiological stress markers measured during pregnancy are associated with poor birth outcomes. In this study psychosocial measures of stress are pregnancy-related anxiety (PRA) and perceived stress (PSS). Epstein-Barr Virus antibody levels were analyzed to indicate stress-related altered immune function. The analysis controls for socioeconomic status, social class, site, household elements, gestation, parity, and age.
Cultural consensus analysis found one cultural model of a good pregnancy with strong agreement. The model blends tradition and biomedicine with slight variation in belief in the traditional elements. Linear regression models indicate that participants who are more consonant in the model have lower levels of both PSS and PRA. Consonance is not associated with EBV antibody levels. Perceiving social support from family and non-family enhances the effect of consonance on PRA, unless perceived family support is above the mean. In this case, the effect is blunted. Social support does not moderate the effect of cultural consonance on PSS. This research demonstrates the critical role of culture in health outcomes.
This work is dedicated to two beautiful souls, Sage and Asa.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEB</td>
<td>Área Geoestadística Básica (Basic Geostatistical Area)</td>
</tr>
<tr>
<td>CRP</td>
<td>C-Reactive Protein</td>
</tr>
<tr>
<td>CV</td>
<td>Coefficient of variation</td>
</tr>
<tr>
<td>EBV</td>
<td>Epstein-Barr Virus</td>
</tr>
<tr>
<td>F</td>
<td>Ratio of variances</td>
</tr>
<tr>
<td>IMSS</td>
<td>Instituto Mexicano del Seguro Social (Mexican Institute of Social Security)</td>
</tr>
<tr>
<td>INEGI</td>
<td>Instituto Nacional de Estadística, Geografía, e Informática (National Institute of Statistics, Geography, and Informatics)</td>
</tr>
<tr>
<td>ISSSTE</td>
<td>Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (Institute of Social Security and Services for State Workers)</td>
</tr>
<tr>
<td>SLE</td>
<td>Stressful life events</td>
</tr>
<tr>
<td>N, n</td>
<td>Number</td>
</tr>
<tr>
<td>p</td>
<td>Probability of results or outcome</td>
</tr>
<tr>
<td>PAN</td>
<td>Partido Acción Nacional (National Action party)</td>
</tr>
<tr>
<td>PRA</td>
<td>Pregnancy-related anxiety</td>
</tr>
<tr>
<td>PRD</td>
<td>Partido de la Revolución Democrática (Democratic Revolutionary Party)</td>
</tr>
<tr>
<td>PRI</td>
<td>Partido de la Revolucionario Institucional (Institutional Revolutionary Party)</td>
</tr>
<tr>
<td>PSS</td>
<td>Perceived Stress Scale</td>
</tr>
<tr>
<td>r</td>
<td>Pearson product moment correlation</td>
</tr>
<tr>
<td>Symbol</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>R²</td>
<td>Multiple correlation coefficient</td>
</tr>
<tr>
<td>SD</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>SES</td>
<td>Socioeconomic Status</td>
</tr>
<tr>
<td>SJE</td>
<td>San Juan Espanatica</td>
</tr>
<tr>
<td>t</td>
<td>Computed value of t-test</td>
</tr>
<tr>
<td>X²</td>
<td>Computed value of chi-square</td>
</tr>
<tr>
<td>( \bar{x} )</td>
<td>Mean</td>
</tr>
<tr>
<td>ZDV</td>
<td>Zapotitlán de Vadillo</td>
</tr>
<tr>
<td>ZMG</td>
<td><em>Zona Metropolitina de Guadalajara</em> (Metropolitan Zone of Guadalajara)</td>
</tr>
<tr>
<td>( \alpha )</td>
<td>Alpha</td>
</tr>
<tr>
<td>=</td>
<td>Equal to</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than</td>
</tr>
<tr>
<td>( \leq )</td>
<td>Less than or equal to</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

In the years it has taken to see this dissertation to completion, there have been countless individuals who have guided and supported me, each in no small way. First and foremost, I thank Kathryn S. Oths for her unyielding patience and perseverance in keeping my efforts moving forward, always steering me back from sideways moments; and picking me up when my feet seemed to have slipped from beneath me. No student could ask for a more dedicated mentor, teacher, and friend. This dissertation would never have been completed without her. Thank you to William W. Dressler for years of answering statistical queries, many times in duplicate. His patience and willingness to walk me through complicated analyses have been invaluable, as are his advice and guidance in the research design and methodology. Thanks to James R. Bindon for giving advice and answers when needed, and especially pointing out the good humor in critical moments when it may have been easy to see the negative. Thank you to Jason DeCaro for his incredible patience as he demonstrated, taught, and watched while I learned hands-on in the laboratory. I would also like to thank him for his quick and thoughtful responses to the many questions I posed to him. Thanks to Ida Johnson for her comments, suggestions, and time that aided in finalizing this dissertation. Many thanks Enriqueta Valdez Curiel for helping me to find and get to the research area, initiate the project in Mexico, provide work space, and, most especially, for her friendship. To Evangelina Villanueva Garcia, I could never have achieved this research project without her friendship, advice, mentorship, and assistance. Thanks for taking me under her wing and trusting me. To Javier Eduardo Garcia de Alba Garcia, Ana L. Salcedo Rocha, Rafael Saldaña Bustos, Georgina Diaz, and Iliana Romo, thank you for

vii
welcoming me and helping me to complete this project in a foreign land. Their support is very much appreciated. To the midwives who trusted me with their clients and who opened their lives to me, I cannot thank them enough. Also, thanks to all of the doctors, nurses, and staff at the IMSS Clinic in Ciudad Guzmán, the Health Centers in the cabeceras, and the New Civil Hospital in Guadalajara.

To my family and friends, I could never thank anyone enough for their support. To Jeff deGraffenried, who endured living apart for my fieldwork and living together for the analysis and writing, and is still here willing to endure more of life with anthropology. There are not enough words to express my gratitude. A huge thank you to my children, Sage and Asa, who moved to another country, went to school in a foreign language, had to say goodbye to friends and family twice, and have made many other sacrifices along the way while I focused on my research. This dissertation belongs to these two children. I never would have made it this far without the love and support of my parents, Mike and Jeanie. Thank you for always encouraging me to keep on keeping on. A world of gratitude goes to Josalyn Randall for her friendship, emotional support, tinctures and teas, and for helping me with childcare and life, both in the States and Mexico. Many thanks go to Sarah Szurek for her unending encouragement, friendship, and professional support. I hope that I can return the favor. Also, to Toni Copeland and Mary Campbell, thank you for helping to keep my head high when I needed a nod. Thanks to Josh Moore, Rachel Shuttlesworth, Chris Humphries, Justy Brown, and Rick Brown for emotional, material, and instrumental support in all things. I will forever be indebted to Bob Boshell for lending space in his home-away-from-home. To Drs. Forero, Vaughn, Salzman, and Lopez at UAB, thank you for keeping me alive to carry out the research and write this dissertation.
Thank you to the National Science Foundation and the University of Alabama for their financial support, without which I could not have completed this research. Finally, to all of the women who participated in this research, and all of the women and men who participated from the sidelines, I could never sufficiently express to them my gratitude for their involvement. It is my hope that this research can benefit future generations of mothers, sisters, and daughters as they experience the blessing of reproduction.
# CONTENTS

ABSTRACT................................................................................................................. ii

DEDICATION............................................................................................................... iv

LIST OF ABBREVIATIONS AND SYMBOLS............................................................. v

ACKNOWLEDGMENTS .............................................................................................. vii

LIST OF TABLES ....................................................................................................... xvii

LIST OF FIGURES ..................................................................................................... xx

1. INTRODUCTION .................................................................................................... 1

2. THEORETICAL ORIENTATION AND BACKGROUND ............................................. 11
   a. Introduction ........................................................................................................ 11
   b. Biocultural Theoretical Approach ................................................................... 11
   c. Cognitive Theory and Cultural Domain Analysis ............................................. 18
   d. Cognitive Theory and Methodological Development in Mexico ...................... 21
   e. Authoritative Knowledge ............................................................................... 25
   f. Culture Change, Pluralistic Health Care Systems, and Intracultural Variation .... 26

3. STRESS AND SOCIAL SUPPORT .......................................................................... 32
   a. Stress Theory and Research ............................................................................ 32
   b. Perceived Stress, Pregnancy-Related Anxiety, and Cell-Mediated Immunity ....... 42
   c. Social Support .................................................................................................. 46

4. PREGNANCY AND CHILDBIRTH ......................................................................... 52
   a. Introduction ...................................................................................................... 52

x
i. West of Ciudad Guzmán, West of the Volcanos .................................149
j. Conclusion .......................................................................................160

7. RESEARCH METHODOLOGY ................................................................161
   a. Introduction ..................................................................................161
   b. Phase I: Cultural Domain Analysis ..............................................162
   c. Freelist: Interview Schedule .........................................................162
   d. Freelist: Sampling and Recruitment: Metropolitan Zone of Guadalajara (ZMG) ........163
   e. Ciudad Guzmán ............................................................................170
   f. Rural Cabeceras and Ranchitos ....................................................173
   g. Freelist: Data Analysis .................................................................175
   h. Pile Sort and Rating Task: Interview Schedule ...........................176
   i. Pile Sort and Rating Task: Sampling and Recruitment ..................177
   j. Pile Sort and Consensus Analysis .................................................177
   k. Phase II: Cultural Consonance and Stress in a Pregnant Sample ........179
   l. Phase II: Measures and Instruments ............................................180
   m. Phase II: Sampling and Recruitment ..........................................187
   n. Metropolitan Zone of Guadalajara ..............................................189
   o. Ciudad Guzmán ............................................................................191
   p. Rural Cabeceras ...........................................................................192
   q. Ranchitos .....................................................................................193
   r. Whole Dried Blood Spot Methodology .......................................193
   s. Lab Analysis ..................................................................................195
   t. Data Analysis: Qualitative and Quantitative Analyses ..................198
u. Conclusion ................................................................................................................. 200

8. OBSTETRICS AND MIDWIFERY IN MEXICO ..................................................... 201
   a. History of Obstetrics and Midwifery in Mexico ................................................. 201
   b. Obstetrics Today ................................................................................................. 204
   c. IMSS Clinic in Ciudad Guzmán ....................................................................... 205
   d. Health Centers in Ciudad Guzmán and Tuxpan ........................................... 207
   e. New Civil Hospital in Guadalajara .................................................................... 209
   f. Midwifery Today ................................................................................................. 211
   g. Sobada or Prenatal Massage .......................................................................... 216
   h. Examples of Midwifery Today in Jalisco ......................................................... 219
   i. Doña Chucha ...................................................................................................... 221
   j. Evita ...................................................................................................................... 227
   k. Doña Lancha ...................................................................................................... 232
   l. Doña Nati .............................................................................................................. 235
   m. Prenatal Decision-Making and Practice ............................................................ 235
   n. Conclusion .......................................................................................................... 240

9. CULTURAL MODEL OF A GOOD PREGNANCY: RESULTS AND DESCRIPTIVES OF
   CULTURAL DOMAIN ANALYSIS ..................................................................... 242
   a. Freelist: Descriptive Statistics ........................................................................ 242
   b. Freelist: Analyzing the Terms ......................................................................... 243
   c. Freelist of Social Support ................................................................................. 252
   d. Multi-Dimensional Scaling and Cluster Analysis with Pile Sort Data ............ 254
   e. Consensus Analysis ............................................................................................ 262
f. Understanding the Items of the Cultural Consensus Model .................................................................266

g. Examining Variation Within the Model ........................................................................................................276

h. Conclusion ......................................................................................................................................................279

10. SAMPLE CHARACTERISTICS OF PHASE II: PREGNANT PARTICIPANTS ................280

a. Individual Characteristics ...............................................................................................................................280

b. Household Characteristics ............................................................................................................................283

c. Factors Related to Pregnancy .......................................................................................................................288

d. Perceived Stress, Pregnancy-Related Anxiety, Stressful Life Events, and Epstein-Barr Virus Antibody Levels .................................................................................................................................290

e. Social Support ...............................................................................................................................................290

f. Cultural Domain Analysis ............................................................................................................................291

11. RESIDENCE PATTERNS AND SOCIODEMOGRAPHIC RELATIONSHIPS ...............292

a. Introduction .....................................................................................................................................................292

b. Residence Patterns ......................................................................................................................................293

c. Site and Education, Income, and Occupation ...............................................................................................295

d. Occupation, Education, Age, and Parity .......................................................................................................298

e. Socioeconomic Status and Residence Patterns ...........................................................................................299

f. Social Class ...................................................................................................................................................301

g. Psychosocial and Physiological Stress .........................................................................................................303

h. Social Support ..............................................................................................................................................307

i. Discussion .....................................................................................................................................................308

12. VALIDATING THE CULTURAL MODEL AND EXAMINING CULTURAL CONSONANCE AND INTRACULTURAL VARIATION .................................................................311
a. Validating the Cultural Model .................................................................311
b. Examining Variation Within the Sample..................................................314
c. Summary of the Analysis of the Cultural Model .......................................319
d. Cultural Consonance .................................................................................323
e. Consonance with the Traditional and Biomedical Elements of the Model ....330
f. Discussion ....................................................................................................333
13. THE PREGNANCY EXPERIENCE IN EVERYDAY LIFE ...............................336
   a. Introduction ..............................................................................................336
   b. Luz María – San Juan Espanatica ..............................................................336
   c. Belén – Copala ..........................................................................................340
   d. Fina – Tecalitlán and San Isidro ...............................................................342
   e. Claudia – Ciudad Guzmán .......................................................................344
   f. María José – Tonala ..................................................................................346
   g. Beatriz – Ciudad Guzmán .......................................................................348
   h. Viviana – Zapotitlán de Vadillo ...............................................................350
   i. Conclusion ..................................................................................................352
14. UNPACKING THE INTRICACIES OF CULTURAL CONSONANCE AND STRESS ...353
   a. Introduction ..............................................................................................353
   b. Perceived Stress and Cultural Consonance ..............................................354
   c. Pregnancy-Related Anxiety and Cultural Consonance ..............................359
   d. Epstein-Barr Virus Antibody Levels and Cultural Consonance ...............367
   e. Conclusion ..................................................................................................369
15. DISCUSSION AND CONCLUSION ...............................................................371
a. Pluralism in Prenatal Care .................................................................375
b. Conclusion ..........................................................................................381
REFERENCES CITED ..............................................................................385
APPENDIX A .........................................................................................420
APPENDIX B .........................................................................................424
APPENDIX C .........................................................................................430
LIST OF TABLES

6.1 Population and insurance coverage in 2005 by research site with percentage within the population in parentheses (INEGI 2009) ............................................................ 116

7.1 Number of interviews obtained in the ZMG according to AGEB and time of day .......... 167

7.2 Social class characteristics of the sample from the ZMG, adapted from 1990 and 2004 census data (INEGI 2009) .......................................................................................... 170

7.3 Informant classification compared to government social class categorization of sample and government population estimates in Ciudad Guzmán .................................................. 172

7.4 2004 INEGI AGEB classifications for rural sample and AGEB classification and population of each municipio (INEGI 2009) .................................................................................. 175

7.5 Perceived Social Support .......................................................................................... 183

7.6 Social Interaction .................................................................................................... 183

7.7 Coding and weights for each item in the cultural consonance measure .................. 186

7.8 Quality Control (CV) for EBV and CRP assays .................................................... 197

8.1 Categories of reasons for visiting a practitioner during pregnancy ........................ 236

8.2 Examples of reasons for visiting a practitioner ...................................................... 236

8.3 Categories of what practitioners did at a visit ....................................................... 237

8.4 Examples of what each practitioner did at a visit ................................................ 237

9.1 Continuous characteristics for freelist sample with mean and standard deviation .......... 242

9.2 Categorical characteristics for freelist sample with total and percentage .................. 242

9.3 Reduced set of freelist terms (n=38) used in pile sort and rating task .................... 244
9.4 Reduced set of freelist terms used in pile sort and rating task with percent of people reporting, average rank, and salience.................................................................245
9.5 Thematic categories for freelist terms.................................................................246
9.6 Spatial distribution of freelist terms of good list by theme and site, in order by frequency.249
9.7 Persons listed as support for a pregnant woman..................................................252
9.8 Clusters 1 and 2 from unconstrained pile sort with first 14 participants .................259
9.9 CCM items ranked by most important to least important.....................................263
9.10 Biomedical, traditional, and ambiguous elements from the shared cultural model of a good pregnancy .............................................................................................266
10.1 Continuous demographic characteristics for individuals in Phase II....................280
10.2 Categorical demographic characteristics of individuals in Phase II .....................281
10.3 Examples of employment and items sold from home in Phase II..........................283
10.4 Continuous household characteristics for Phase II..............................................284
10.5 Categorical household characteristics for Phase II.............................................284
10.6 Continuous pregnancy characteristics for Phase II............................................288
10.7 Categorical pregnancy characteristics for Phase II.............................................289
10.8 Continuous stress-related characteristics for Phase II.........................................290
10.9 Continuous social support characteristics for Phase II.......................................291
10.10 Continuous characteristics from cultural domain analysis for Phase II..............291
12.1 Answer key from consensus analysis in Phase II and number and percent of participants who are consonant with that item ........................................................................324
14.1 Bivariate correlation matrix of the dependent variable perceived stress (PSS) and independent variables (N=88)........................................................................355
14.2 Regressions of perceived stress (PSS) on study variables (standardized coefficients) (N=88)..................................................................................................................................................357

14.3 Bivariate correlation matrix of the dependent variable pregnancy-related anxiety (PRA) and independent variables (N=88)........................................................................................................................................360

14.4 Regressions of pregnancy-related anxiety (PRA) on study variables (standardized coefficients) (N=88)..................................................................................................................................................361

14.5 Bivariate correlation matrix of the dependent variable Epstein-Barr Virus (EBV) antibody levels (squareroot) and independent variables (N=63)...........................................................................................................................................368

14.6 Regressions of Epstein-Barr Virus (EBV) antibodies on study variables (standardized coefficients) (N=63)..................................................................................................................................................369
LIST OF FIGURES

6.1 Google Earth image of Jalisco (outlined in white) with each research site represented by a pinpoint (red=urban, green=semi-urban, brown/orange=cabecera, yellow=ranchito) ..................117
6.2 Map of research area with sites outlined in blue, volcanos in red ........................................118
6.3 Road in front of Dona Lancha’s home .................................................................121
6.4 Chiminea factory in Jauja, neighborhood in Tonalá .........................................................122
6.5 Brickmaking in Jauja, neighborhood in Tonalá ..............................................................123
6.6 Pregnant woman mixing mud for bricks with her feet ......................................................124
6.7 Vulcán del Fuego and Nevado de Colima, eastern view ................................................124
6.8 Western view of the volcanos, taken on the road to Copala ............................................125
6.9 View of Ciudad Guzmán from Las Peñas ecological park ................................................126
6.10 Northern end of Ciudad Guzmán with Lake Zapotlán in the distance .........................127
6.11 Cathedral in Ciudad Guzmán ......................................................................................129
6.12 Vendor in Ciudad Guzmán plaza .................................................................................130
6.13 Painted street and houses in Ciudad Guzmán in honor of San José ................................131
6.14 Houses painted for the festival of San José ....................................................................132
6.15 Statues of Mary, Joseph and Jesus in the San José parade in Ciudad Guzmán ..............133
6.16 Sonajeros dancing for San José ......................................................................................134
6.17 Sonajeros dancing in San José parade in Ciudad Guzmán ............................................134
6.18 Top view of beadwork on sonajero’s hat ........................................................................135
6.19 Mountainous terrain in southern part of Pihuamo municipio ......................................138
6.20 Obstacles on the road between the main highway and El Guayabo .......................... 139
6.21 Outdoor eating area of Dr. Benito and his wife in El Guayabo............................... 140
6.22 Outdoor stove where Dr. Benito fries fish from the lake........................................ 141
6.23 Population chart on the wall of the Health House of San Isidro............................ 142
6.24 Building that houses the communal corn mill in San Isidro................................. 143
6.25 Kitchen in San Isidro, in building separate from the house.................................. 144
6.26 Health center in Tuxpan........................................................................................ 145
6.27 Prenatal records in the Health Center in Tuxpan.................................................... 145
6.28 Evita and two midwives (sisters) in San Juan Espanatíca................................. 146
6.29 A pregnant woman and midwife at the woman’s house in Los Laureles outside of San Juan Espanatíca ................................................................. 147
6.30 Health House in Poncitlán .................................................................................. 148
6.31 Church in Poncitlán.............................................................................................. 148
6.32 Man on horse in plaza of Zapotitlán de Vadillo .................................................... 149
6.33 Main church in Zapotitlán de Vadillo .................................................................. 150
6.34 Indoor kitchen of midwife (pictured on right) in Copala....................................... 151
6.35 Outdoor cooking area and garden of midwife in Copala....................................... 151
6.36 Children coming home from school in Copala..................................................... 152
6.37 Man loading his donkey in Copala ........................................................................ 152
6.38 Homes and cornfield in Jiquilpan ........................................................................ 154
6.39 Man with donkey carrying firewood in Jiquilpan.................................................. 154
6.40 Homes on hillside in La Yerbabuena................................................................. 155
6.41 Laundry drying on fences in La Yerbabuena......................................................... 155
6.42 Large kitchen in rural home in Jose María de Morelos ......................................................... 156
6.43 Baby cradle in rural home in La Yerbabuena ...................................................................... 157
6.44 Health House in La Yerbabuena ......................................................................................... 158
6.45 Typical home in La Yerbabuena ......................................................................................... 158
6.46 Retired midwife (left) in La Yerbabuena showing Evita medicinal plants ......................... 159
6.47 Separate outdoor kitchen of retired midwife in La Yerbabuena .......................................... 160
8.1 Nurse Cortéz at her desk in the IMSS clinic in Ciudad Guzmán ........................................ 206
8.2 Waiting room and nurses’ desks in Health Center in Tuxpan ............................................ 208
8.3 Waiting room in Health Center in Tuxpan ........................................................................... 209
8.4 Packed waiting room in New Civil Hospital in Guadalajara .............................................. 210
8.5. Women standing in line to be weighed and blood pressure taken in ................................. 211
8.6 “Family Planning” poster hanging in the home clinic of a midwife in Guadalajara .......... 212
8.7 Doña Christi, age 90 ............................................................................................................. 219
8.8 Doña Nati performing a sobada in Los Laureles ................................................................. 217
8.9 Doña Nati massaging woman’s stomach in Los Laureles to determine the baby’s position 218
8.10 Doña Chucha (right) and Evita with a laboring woman ................................................... 222
8.11 Tortilla business of Doña Chucha ..................................................................................... 222
8.12 Desk and exam table of Doña Chucha ............................................................................... 224
8.13 Medicines in Doña Chucha’s clinic ................................................................................... 224
8.14 Cloth wall of impoverished house of laboring woman in “middle class” area of Ciudad Guzmán .................................................................................................................. 225
8.15 Toys and scrap wood strewn in home of a laboring woman in a “middle class” area of Ciudad Guzmán .................................................................................................................. 226
<table>
<thead>
<tr>
<th>Image Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.16</td>
<td>Evita massaging a laboring woman</td>
</tr>
<tr>
<td>8.17</td>
<td>Evita and her small granddaughter leading a protest against domestic violence in the plaza in Ciudad Guzmán</td>
</tr>
<tr>
<td>8.18</td>
<td>Administering a sobada and checking baby’s position</td>
</tr>
<tr>
<td>8.19</td>
<td>Evita bound a woman’s belly with a cloth to help push the baby out</td>
</tr>
<tr>
<td>8.20</td>
<td>Doña Chucha listens to the baby’s heartbeat with a Doppler</td>
</tr>
<tr>
<td>8.21</td>
<td>Doña Lancha standing with Evita in her clinic</td>
</tr>
<tr>
<td>8.22</td>
<td>Doña Lancha’s house and clinic in Tonalá</td>
</tr>
<tr>
<td>8.23</td>
<td>The clinic of Doña Lancha in Tonalá</td>
</tr>
<tr>
<td>8.24</td>
<td>Baby scales and medical supplies in Doña Lancha’s clinic</td>
</tr>
<tr>
<td>9.1</td>
<td>Frequency of social class within site for freelist participants</td>
</tr>
<tr>
<td>9.2</td>
<td>MDS graph with clusters from the unconstrained pile sorts without ranchito participants</td>
</tr>
<tr>
<td>9.3</td>
<td>MDS graph with clusters from the unconstrained pile sorts with the total sample, including the ranchito participants</td>
</tr>
<tr>
<td>9.4</td>
<td>MDS graph with clusters and PROFIT line (N=20)</td>
</tr>
<tr>
<td>9.5</td>
<td>Scatterplot of age and competence scores for Phase I consensus analysis</td>
</tr>
<tr>
<td>9.6</td>
<td>Scatterplot of age and traditional score for Phase I cultural domain analysis</td>
</tr>
<tr>
<td>10.1</td>
<td>Education experience by site for Phase II</td>
</tr>
<tr>
<td>10.2</td>
<td>Frequency of social class in Phase II</td>
</tr>
<tr>
<td>10.3</td>
<td>Distribution of socioeconomic status scores in Phase II</td>
</tr>
<tr>
<td>11.1</td>
<td>Range of age by coresidence patterns</td>
</tr>
<tr>
<td>11.2</td>
<td>Frequency of coresidence patterns by site</td>
</tr>
<tr>
<td>11.3</td>
<td>Frequency of income categories by site in Phase II</td>
</tr>
</tbody>
</table>
11.4 Frequency of occupation by site in Phase II ......................................................... 297
11.5 Frequency of occupation of husband by occupation of participant ......................... 298
11.6 Range of socioeconomic status by coresidence pattern ........................................ 300
11.7 Range of socioeconomic status by site ..................................................................... 301
11.8 Frequency of social class by site in Phase II ............................................................ 302
11.9 Range of socioeconomic status by social class and site ............................................ 303
11.10 Range of perceived stress scores by site ................................................................... 304
11.11 Range of pregnancy-related anxiety by occupation .................................................. 305
11.12 Range of Epstein-Barr Virus antibody levels by coresidence ................................. 306
12.1 Distribution of cultural competence scores in Phase II ............................................. 312
12.2 Range of cultural competence scores by social class in Phase II ............................... 313
12.3 Distribution of traditional scale scores in Phase II ................................................. 314
12.4 Scatterplot of factor 1 and factor 2 cultural competence scores from CCA with subcluster in red .................................................................................................................................. 318
12.5 Frequency of correctly knowing midwife and sobada questions by inclusion in a subcluster of low-competence participants .................................................................................................................. 319
12.6 Distribution of cultural consonance scores ............................................................... 323
12.7 Range and median of cultural consonance scores by social class .............................. 325
12.8 Range and median of cultural consonance scores by site ......................................... 325
12.9 Range and median of cultural consonance scores by occupation ............................. 326
12.10 Range and median of cultural consonance scores by geographic proximity to kin ...... 327
12.11 Scatterplot of correlation of cultural consonance and perceived stress .................. 328
12.12 Scatterplot of cultural consonance and life crisis events ........................................ 329
12.13 Scatterplot of correlation of cultural consonance with social interaction with family network ........................................................................................................................................330
12.14 Scatterplot of traditional consonance and perceived stress .................................................................................................................................331
12.15 Scatterplot of correlation of traditional consonance and pregnancy-related anxiety ...... 332
12.16 Range and median of biomedical consonance by site ..................................................................................................................................333
13.1 Interviewing Luz María outside her home ..................................................................................................................................................337
13.2 Cooking stove inside home of Luz María ..................................................................................................................................................338
14.1 Partial regression plot of perceived stress regressed on cultural consonance controlling for age, estimated gestational age, marital status, site, and stressful life events .................................................................358
14.2 Partial regression plot of pregnancy-related anxiety regressed on cultural consonance controlling for age, prayer, socioeconomic status, marital status, and number of pregnancies...362
14.3 Variation in pregnancy-related anxiety scores according to marital status .......................363
14.4 Interaction of perceived social support from family and cultural consonance on pregnancy-related anxiety ........................................................................................................................................................................365
14.5 Interaction of perceived social support from non-family and cultural consonance on pregnancy-related anxiety ........................................................................................................................................................................365
CHAPTER ONE: INTRODUCTION

Despite Mexico’s decades of industrial and economic stability as well as leading advances in medicine and health research, it was not until the 1960s that the international community began to change its view of the country from a developed nation to a developing one (Glade 1963). As a country, Mexico is quite young, having gained independence from Spain in 1821. However, early in its youth Mexico aspired to be internationally competitive and recognized by focusing efforts on education and professionalization (Penyak 2003). Urban centers grew quickly, especially in what is now the capital, the Federal District of Mexico (also known as Mexico City), and opportunities became increasingly available in these areas to the mestizo population. Industrialization in the urban areas caused increased polarization with the rural areas. Here, the peasant population increased as a result of urban industrialization. As Mexico’s large cities modernized simultaneously with the rest of the world, some of the non-urban areas carried on in traditional ways of life while others became dependent upon nearby cities. Despite growing industrial dependence, many peasants continued to maintain traditional beliefs and behaviors.

Vast disparities in available resources continue to exist between Mexico’s rural peasants and its urban population, although the differences between rural and urban poor are less discernible than between rural poor and urban rich. Migration to urban centers in search of wage work, and migration to and from the United States, has aided in bringing Western amenities and ideas to rural Mexico. These amenities and ideas filter back through familial lines of communication. For example, television sets are quite common throughout Mexico, even in
remote areas. I was struck one night when I discovered the 55-year-old woman I was spending the night with watching television. The rural community where we were does not have electricity or running water, however, most people have solar-panels that power generators in the evening for lights, radios, televisions and other electronic devices. The woman’s sister (also in her 50s) joked that she stays up all night watching old movies and reruns on one of the only channels they can pick up. In contrast, reverse flow has taken traditional ideas to the urban centers.

Disparities in health care only recently began to be addressed by the government. In the 1970s, the Mexican government, spurred by concerns of high population growth, initiated programs to expand family planning and primary health care into the rural areas (Sesia 1997). This effectively made biomedical care more available to rural residents. The tradition of midwifery has continued in all areas of Mexico, urban and rural, however, only the poorest states such as Chiapas and Oaxaca maintain a large midwife-assisted birth practice. States such as Jalisco, where this research was conducted, have low rates of midwifery-attended births. Over 90 percent of births are attended by a biomedical practitioner (INEGI 2009). Despite this trend, midwives continue to provide prenatal and postpartum care to a large percentage of the population (Sargent and Bascope 1997; Sesia 1997). As a result, the institution of pregnancy and birth in Mexico includes both biomedical and traditional caregivers. This study addresses cultural models of prenatal care in a pluralistic medical system from a biocultural perspective. Individual variation is examined in association with sociocultural and structural factors and maternal stress.

A biocultural theory that considers intracultural diversity must include the concepts of adaptation, embodiment, the political-economy, and the ecological and sociocultural
environment. The sociocultural process of reproduction can be described as the activities and relationships that perpetuate social systems through the cycle of production-circulation-consumption-production (Browner and Sargent 1990; Harris and Young 1981). Browner (2000) notes that, unlike other species, the human female becomes pregnant and gives birth within the material and social conditions contextualizing her daily existence. This context includes political-economic structures such as social class, access to and type of health care, employment, education and types of available birth control (Browner 2000; Ginsburg and Rapp 1995). The reproductive context is further defined by power relations from the most macro political economic forces to the microlevel relationships in a woman’s everyday individual life (Handwerker 1990; Homans 1985). Access to and availability of biomedical health care and traditional health care are included in the analysis to address political-economic structures influencing prenatal care decision-making and behavior. Also, education, occupation, household variables, socioeconomic status, social class, and site are examined to address variation within the sample.

Anthropologists have studied the effects of culture change and stress as adaptation using both psychosocial and physiological markers (Dressler 1995; McDade 2001). The study of the effects of culture change has been previously approached using various types of models, including rural-urban continuums and measures of acculturation. Although beneficial because of their theory-building potential, these types of models tend to delineate variability according to superimposed categories, such as rural vs. urban or household goods. In contrast, cultural domain analysis of lifestyle and modernization has been used to build models based on informant knowledge and information, and has proven useful in eliciting subjective measures of culture change in cross-cultural contexts that can then be analyzed in association with stress markers,
such as blood pressure, Epstein-Barr virus antibodies, and depression (Dressler 1991, 1995; Dressler and Bindon 2000; McDade 2001). Intracultural variation in knowledge and behavior is thought to be associated with psychobiologic outcomes such as psychosocial stress and biological stress (Decker et al. 2003; Dressler 1982; Dressler and Bindon 2000; Dressler and Dos Santos 2000; Janes 1990; McDade 2001), illustrating a relationship between variation and adaptation. Previous research has found cultural consonance, or behavioral approximation to the cultural consensus model, to be associated with arterial blood pressure and depressive symptoms (Dressler and Dos Santos 2000; Dressler et al. 2002).

Stress has been measured physiologically and psychosocially in pregnancy and found to be associated with complications, with social support shown to moderate the effects of stress in pregnancy (Dejin-Karlsson and Ostegren 2003; Nuckolls et al. 1972; Oths et al. 2001; Rini et al. 1999; Rondo et al. 2003; Sable and Wilkinson 2000; Wadhwa et al. 1996). However, studies of cultural variation and stress in pregnancy are lacking. Psychosocial stress measures, including depression, anxiety (Rini et al. 1999), job strain (Oths et al. 2001), and perceived stress (Rondo et al. 2003; Sable and Wilkinson 2000), as well as biological markers of stress (Wadhwa et al. 1996) have all been shown to be associated with birth outcomes, with higher stress predicting worse outcomes. Stress becomes internalized, or embodied, and physically manifests in culturally-sanctioned expressions. Perceptions of stress can be translated into physical reality and detected through physiological biomarkers (Dressler 1991, 1995; McDade 2001) and exhibited in culturally-appropriate ways, such as an illness (Jenkins and Valiente 1994; Oths 1999). Furthermore, an individual does not simply embody the stress associated with everyday existence, but embodies that existence itself. Each individual is located in a sociocultural, political, economic space. The social identity associated with our location becomes part of our
embodied reality. Stress can result from incongruencies between where we perceive we should be located and where we are located. Although this dissertation does not address cultural models of lifestyle, it does take into account the everyday reality of each of the participants, including her social relationships, support, and other structural resources.

This project examines cultural models of pregnancy in Mexico using cultural domain analysis. Additionally this research examines the pattern of cultural modeling of pregnancy among inhabitants of a metropolitan area, a medium-sized city, and rural communities in the context of a pluralistic reproductive health setting that incorporates elements of both traditional and biomedical prenatal care. Variability in consonance with a shared model during pregnancy is examined to determine the association with stress and social support. Cultural consonance is employed as a conceptual tool to assess the gradient of variability in the context of medical pluralism.

The following research objectives guided this project: 1) to determine if there is one or more model of pregnancy in an environment with both traditional and biomedical caregivers; and 2) to better understand the relationships among cultural consonance with a shared model of pregnancy, social support and maternal stress. I hypothesize that women who are more consonant with a shared model of a good pregnancy will have altered immune response and lower levels of psychosocial stress than women who are less consonant, and that social support moderates these relationships.

The research was conducted in and around Ciudad Guzmán, Jalisco, Mexico from September 2006 to December 2007 and was divided into two phases. Seventy-three participants were recruited for Phase I and 88 participants were recruited for Phase II. Jalisco is a state with a diverse economic base that encompasses a large metropolitan zone, medium-sized cities,
smaller rural communities. This research focuses, in particular, on intracultural variation in a model, or models, of pregnancy in Mexico. Purposive sampling was used to obtain a wide range of sociodemographic variability. Cultural consensus modeling (Romney et al. 1986) examined cultural models of a “good” pregnancy in Phase I. Informants were asked to discuss what behaviors, attitudes, and resources they believe make for a successful pregnancy. After generating the cultural model(s) in Phase I, a cohort of pregnant women was interviewed regarding cultural consonance (Dressler 2007) with a good pregnancy and stress in Phase II. This research also specifically examines the role of culture in influencing psychobiological adaptation during pregnancy, therefore, cultural consonance with a good pregnancy was analyzed for association with psychosocial and physiological maternal stress, including perceived stress, pregnancy-related anxiety, and immune response, as well as with regional location and other sociodemographic factors. Multi-dimensional scaling, cluster analysis, and cultural consensus analysis were conducted in Anthropac 4.0 (Borgatti 1996a); all other statistical analyses were conducted in SPSS 12.0 and 16.0. Psychosocial stress is measured by pregnancy-related anxiety (Wadhwa et al. 1993; Rini et al. 1999) and perceived stress (Cohen et al. 1983; Cohen and Williamson 1988); both constructs were adapted to the local cultural context. An abbreviated version of the Stressful Life Events scale (Holmes and Rahe 1967) in the previous year was used to account for environmental stressors. Immunoassay of whole blood spots tested for Epstein-Barr virus (EBV) antibodies and C-reactive protein (CRP) to indicate physiological stress response (McDade 2001, 2002).

The findings from this research may contribute to an understanding of cultural models within a changing paradigm of pregnancy and birth, and could benefit prenatal care practice in Mexico. Examining behavior in a pluralistic setting requires awareness of the individual variation
within that domain, including factors involved in decision-making. Discerning how cultural models and variation in these models are associated with psychological and physical health outcomes, or embodiment, can inform health policy and practice by enhancing comprehension among practitioners and policy-makers of individual beliefs and behaviors within pluralistic health care contexts.

Chapter 2 presents the theoretical framework that shaped and informed the research design and objectives of the study. The biocultural perspective is defined and described, specifically focusing on political-economy, adaptation and embodiment. Cognitive theory and methodology development in anthropology, and specifically in Mexico, are discussed. The theoretical concept of authoritative knowledge informs a study of medical pluralism. Finally, background in intracultural variation and culture change, as well as pluralistic health care settings is given.

Chapter 3 focuses on theory in stress and social support, drawing on inter-disciplinary research. After defining stress, the concepts and measurements of perceived stress, pregnancy-related anxiety, and cell-mediated immunity are presented and discussed, elaborating on studies of stress in pregnancy and the mechanisms of the psychophysiological pathway of stress during pregnancy. Social support and various subcategories of support are defined, with a presentation of the culturally salient support resources in Mexico.

Chapter 4 provides a review of the literature on pregnancy and childbirth. First, an overview of the anthropology of reproduction is given, specifically matters related to pregnancy management, birth, and the postpartum. Traditional ways of knowing about birth in non-Western contexts are presented, focusing on Latin America. Finally, the chapter discusses
technology and its prevalence in biomedical birthing systems and how technological models of birth become integrated into systems of pregnancy and childbirth.

Chapter 5 reviews the anthropology of Mexico, including theory and findings. Concepts of peasantry and urban anthropology, beginning in the mid-1900s, lay the foundation for later anthropological work that turned to modernization and urbanization in the midst of a global economy. Gender constructs in Mexico, and much of Latin America, are culture specific in many ways, therefore anthropological inquiry into gender relations, identity, and family is presented. A robust history of medical anthropology and comparative research in Mexico is also provided in the chapter. Anthropology of pregnancy and childbirth specific to the Mexican context rounds out this chapter on Mexican anthropology.

Chapter 6 depicts the research setting, first giving a brief synopsis of the history of Mexico and its political-economy. A description of the current health care system sets a backdrop for understanding insurance schemes and available resources. The urban and semi-urban research sites are detailed first. Description of the rural areas is divided into regions by geographic features and proximity to the semi-urban city.

Chapter 7 details the research methodology of the project. The research is divided into Phase I, a cultural domain analysis, and Phase II, a more extensive inquiry into the relationships between the cultural model, cultural consonance, stress, social support and sociodemographic factors. The interview schedule of Phase I is included in a discussion of the freeslists, pile sorts, and rating scale methodology. Sampling strategies in Phase I are also included. Finally, the Phase II interview schedule and sampling strategies are presented.

Chapter 8 first looks at the history of obstetrics and midwifery in Mexico. A summary of obstetrics today is followed by a description of the clinics where research participants were
interviewed or where their names were obtained from providers. A discussion of midwifery and the sobada, or prenatal massage, is followed by case examples of five midwives who were integral in recruiting participants to the study. Qualitative data from open-ended questions about practitioner choice and practices in pregnancy management are examined.

Chapter 9 advances the results of Phase I and the cultural domain analysis, detailing the cultural consensus model. First, results from the freelisting tasks of good and bad things and social support are analyzed followed by analysis of the multi-dimensional scaling and cluster analysis of the pile sorts. Cultural consensus analysis results from the ratings tasks are then presented and discussed and variation within the model is examined.

Chapter 10 provides statistical descriptive characteristics of the Phase II sample, including individual and household characteristics, factors related to pregnancy, the stress measures, social support, cultural competence and cultural consonance. Chapter 11 explores bivariate relationships between the sociodemographic factors of residence patterns, site, education, income, occupation of participant and husband, age, parity, socioeconomic status, and social class. The bivariate relationships with the stress and social support variables are also discussed.

Chapter 12 shows how the cultural model identified in Phase I is validated through cultural consensus analysis of the ratings task in Phase II with the sample of pregnant participants. Variation within the Phase II sample is examined and an analysis of the various elements and themes of the model is provided. The results of the cultural consonance measure are discussed in detail. Cultural consonance with the whole model and consonance with the traditional elements of the model only are tested bivariately against perceived stress, pregnancy-related anxiety, Epstein-Barr virus antibody levels, perceived social support, social interaction,
age, site, social class, socioeconomic status, civil status, gestation and parity, in addition to other variables.

Chapter 13 presents seven case studies of participants in the study. Sociocultural environment, social resources, and daily lives provide a backdrop for understanding each woman’s individual existence and how this existence is perceived by the individual and becomes embodied. Each participant’s competence and consonance with the cultural model is also discussed, as well as her individual circumstances in the larger political-economy that may hinder or help her to behave appropriately.

Chapter 14 covers the multivariate analyses of cultural consonance regressed on the primary dependent variables of perceived stress, pregnancy-related anxiety and Epstein-Barr virus antibody levels. Interaction effects with social support are analyzed to further understand these relationships.

Chapter 15 discusses the results of the research and takes a comprehensive look at a cultural model of a good pregnancy, intracultural variation, and psychosocial and physiological stress. Finally, conclusions and implications for future anthropological and inter-disciplinary research and policy-making are given.
CHAPTER TWO: THEORETICAL ORIENTATION AND BACKGROUND

Introduction

Biocultural and cognitive theory inform the research question and design of this dissertation. This research aims to determine if there is one or more models of pregnancy in an environment with both traditional and biomedical caregivers and to better understand the relationships among cultural consonance with a shared model of pregnancy, social support and maternal stress. The hypothesis is that women who are more consonant with a shared model of a pregnancy will have altered immune response and lower levels of psychosocial stress than women with lower consonance, and that social support moderates these relationships. Biocultural theory provides a holistic framework from which to examine the cultural, biological, social, psychological and political-economic as integrated aspects of health and, in the case of this research, pregnancy. Cognitive methodology offers an effective way of ascertaining emic suppositions of health in a given domain, specifically cultural models of pregnancy.

Biocultural Theoretical Approach

Kearney (2004) reflects on four decades of his own research in Mexico and examines the changing paradigms from which he approached his studies. In his recent book, Changing Fields of Anthropology, Kearney (2004) argues that anthropology needs to move toward a holistic approach, melding both materialist and idealist approaches to research, acknowledging both the infrastructure and superstructure of the community or study population. Put simply, Kearney (2004) says the debate between science and humanities in anthropology should be reconciled by intradisciplinary work that draws from many of the subdisciplines in the field. A biocultural
theoretical approach in medical anthropology answers this call for holism, integrating the materialist (e.g., political-economic, biological, sociocultural conditions of living) and the idealist (e.g., cognitive, ideological, emotional) paradigms. The biocultural approach considers both culture and the body, in an effort to understand the interaction between social life and health (Foss and Rothenberg 1987). The evolution of biocultural theory is marked by heuristic debate on the appropriate factors that should be included in a holistic anthropological approach in medical anthropology.

Goodman and Leatherman’s *Building a Biocultural Synthesis* (1998) contributes to biocultural understanding by defining and recognizing gaps in biocultural practice. Indeed, the aim of the book is to underscore the relevance of a political-economic perspective in biological anthropology. The authors argue for bringing the “social” back into biological anthropology by modifying a parable to involve a team of biological anthropologists who measure all potential explanatory domains of people drowning in a river. The authors point out that, like the man in the parable who only rescues the people but does not stop to investigate upstream and see who is pushing them in, biological anthropologists neglect to look upstream and ignore the greater (political-economic and cultural) structure pushing the people in.

The concept of adaptation is vitally important in the specification of a biocultural theory. As Leatherman (1998) argues, human biology can be viewed as “a product of social relations through which people access fundamental resources and through which labor is mobilized and appropriated” (249). The adaptability of the body is not just shaped by physical environmental factors, but through social relations as well (Leatherman 1998). Thomas (1998) also calls for a reformulation of the adaptation concept to include a political-economic component in human
adaptability. Both of these researchers emphasize the cultural and social aspects of adaptation, rejecting the idea that adaptations are strictly biological.

By incorporating a political-economic element into medical anthropology, the biocultural approach draws from the Marxist concepts of production and reproduction. Goodman and Leatherman (1998) and Thomas (1998) propose that culture is a structure, or part of the structure. Structural factors, including culture, both shape and are shaped by production and reproduction. The social relationships created by the interaction of production and reproduction within the parameters of the political-economy and the cultural context lead to behavioral and sometimes physiological adaptations.

Leatherman (1998) discusses the Nuñoa project of Thomas et al. (1988). This is a return visit to a massive ecological study done by Baker and Little (1976) in the Andes. Here, Leatherman (1998) demonstrates how simply altering the research perspective, or the theoretical framework, from an ecological to a biocultural one (including political-economic), can entirely change the research design, the types of questions asked, and even the scope of interpretation of results. They recognized that human agency adds social and historical aspects to the environment and produces individual variation. (Leatherman 1998). Thomas et al. (1988) and Oths (1999) carry this link further and demonstrate the connection between illness, household production and reproduction in highland Peru. Through historical political-economic occurrences, the population in the study by Thomas et al. (1988) was made vulnerable to illness, which affects the ability of the household to produce and reproduce, perpetuating poverty and malnutrition and, thus, illness. In a study of debilidad, an Andean illness, Oths (1999) argues that culturally-appropriate notions of household makeup and production have been fostered within a harsh political-economic and social environment. When a household does not meet
cultural requirements, those members who are forced to bear the burden tend to become ill. Panter-Brick (1991) and Oths et al. (2001) show how social relations of production and mode of production can incite behavioral adaptations and influence health outcomes. In her study of two castes in Nepal, Panter-Brick (1991) finds that workload and subsistence lifestyle, as well as physical environmental factors such as seasonality, affect nursing patterns and, subsequently, nutritional status. In a study of low birth weight in the southern United States, Oths et al. (2001) discovered an association between a lack of control in the workplace during pregnancy and low birth weight. This relationship was especially noted among African-American women.

Handwerker (1990) argues that every relationship has an underlying power dynamic that, at both the macro and microlevels, can influence and dictate reproduction and institute social change. All of these studies provide evidence for a clear link between production, reproduction, and health, reiterating the importance of attempting a holistic anthropological approach through the integration of a biocultural theory that includes the political-economy and culture in the structural umbrella that interacts with individual agency and behavior.

Another aspect (in addition to political-economy and adaptation) of moving toward a more complete theory of biocultural medical anthropology is the concept of embodiment. Engel (1977), in an early landmark paper, argues for a new biomedical model, a biopsychosocial model that rejects the original model of reductionism and dualism for understanding illness and disease (Engel later notes that his model does not account for culture). Burkett (1991) argues the need to include culture (as a meaning system) in a model of illness, stating that culture “does not consist of optional factors that only sometimes influence our perceptions and behaviors” (287). One need only to look at other cultures to realize that the biomedical paradigm is itself culturally-constructed. Building on Engel ten years later, Foss and Rothenberg (1987) describe and define
the infomedical model based on the concept of self-organizing systems, arguing “in favor of a revolutionary shift from a biological systems infrastructure to a self-organizing systems infrastructure, or from a biomedical to an ‘infomedical’ model,” (5). Such a shift involves leaving the old dogmatic paradigm of reductionism/dualism and embracing the idea of interactionism, or bodily monism (Oths 1999). That is, illness and disease are part of a system in which etiological factors cannot be reduced simply to the biological definition of disease, but must be understood as occurring within an interacting system. Furthermore, that system involves much more than just a germ and a host, but also the psychological, biological, social, political, and cultural elements surrounding the host. Once this understanding has been established, then the concept of embodiment can be understood.

The concept of embodiment used in this dissertation rejects mind-body dualism, as well as cultural reductionism. It is based on the knowledge that the body is not a tablet onto which illness and disease writes its history, but instead is a vessel within which all of the outside elements become internalized and can emerge as some form of culturally-appropriate expression of illness or disease (Csordas 1994). Bourdieu’s (1977) habitus also informs this dissertation. Bourdieu (1977) explicitly places an individual in the greater historical material circumstance of a group. The individual learns to navigate their particular daily circumstance, resulting in intra-group variation. Oths (1999) and Jenkins and Valiente (1994) provide accounts of embodied illnesses and how these illnesses are shaped by economic, social, political, and cultural factors. Dos-Santos et al. (2001) link embodiment with epidemiology showing a relationship between socioeconomic differences and adult body composition. Differences in caloric demands of labor and in the social value attached to food are related to socioeconomic differences, while gendered differences in standards of physical attractiveness also add to the variation (Dos-Santos et al.)
These studies illustrate the paradigmatic obstacles to achieving an accurate assessment of disease and illness within what Foss and Rothenberg (1987) deem the First Medical Revolution, or biomedicine, when illness and health are viewed as strictly biological processes. Likewise, a biocultural assessment in anthropology must also account for the social, political-economic, and cultural in addition to the physical and biological.

Dressler (2005) argues that the cultural component of biocultural research has been left out of the biocultural approach. Pelto and Pelto (1996) state that the “hallmark of anthropology…is the so-called holistic approach” (300), affecting research design by inherently requiring an all-encompassing approach to data collection and analysis. Further, they, along with Dressler (2005), argue for the use of a concept of culture that can be measured. In other words, the goal is to examine culture as a variable instead of taking for granted the existence of a monoculture that can be overlooked as a component of the interacting system of health. Within any culture there is variation because culture is not uniformly distributed. By operationalizing culture and thereby accounting for the individual, intracultural diversity can be both acknowledged and better understood. Just as socioeconomic status can be both an obstacle to some individuals and a means to achievement for others, dependent upon both resources and individual agency, culture is also varied in both its influence as a structural resource and its modification by individual agency. Thus, intracultural diversity is essential to understanding and analyzing culture.

Culture is operationalized in this project with cultural consonance analysis (Dressler 2007), an analytical model that builds upon cultural consensus analysis (Romney et al. 1986). Cultural domain analysis is implemented to determine if a shared model of a good pregnancy exists among women in Jalisco, and cultural consonance then measures how closely the
individual can approximate, or behave, like the cultural model. The primary outcome of interest is stress. Thus, this project examines the interrelationships between cultural consonance, stress, and sociopolitical factors that, separately or combined, enable or inhibit an individual’s production of a good pregnancy.

At least 30 years of research and discussion have laid the groundwork for current theoretical perspectives with the aim of developing a comprehensive working biocultural theory in medical anthropology. The incorporation of a political-economic approach, the reformulation of the concept of adaptation, and an understanding of the concept of embodiment are essential elements in biocultural theory. Furthermore, re-introducing the concept of culture to biocultural theory has led to the creation of an analytical tool, cultural consonance (Dressler 2007), which not only operationalizes culture, but accounts for both structure and agency.

The research design for this project was formulated from a biocultural theoretical perspective, taking into account the political-economy, adaptation, and embodiment. These three concepts are intertwined and difficult to separate in an analysis. Therefore, the research design aimed to include characteristics of individuals, households, communities, and culture. With these goals in mind, access and availability of both biomedical and traditional prenatal care are examined, in addition to socioeconomic status, government classifications of social class, education, and site as a measure of urbanity or rurality of the area where the participant lives. Adaptation is measured as psychosocial and physiological stress response, taking into account other factors such as social support and stressful life events. Embodiment would likely best be examined as pregnancy outcomes. In other words, embodiment is the manner in which the sociocultural structural factors become internalized and produced within the pregnancy. Unfortunately, pregnancy outcomes are not yet included in the analysis due to time constraints.
and other logistical complications during data collection. However, this design examines psychosocial stress perception and physiological stress responses, equally legitimate ways of addressing the concept of embodiment.

**Cognitive Theory and Cultural Domain Analysis**

The methodology employed in this research to elicit the cultural meanings and knowledge of the participants in the domain of pregnancy is derived from cognitive theory in anthropology. Cultural domain analysis as it is used in this research is the current result of several decades of creating and applying novel theory and methodology to the study of culture. Building on the work of early theorists such as Tylor, Boas, Kroeber, and Sapir, a working cognitive definition of culture is shared knowledge about beliefs and behaviors. Goodenough (1981) defined culture as knowledge located in the individual. Current research using cultural domain analysis takes as a central guiding principal the idea that culture is consensus; that shared knowledge makes a social group. Inherent in this definition is the notion of variability as well.

D’Andrade (1995) delineates four fundamental attributes of cultural meaning systems: they are constitutive, representational, directive, and evocative. Being constitutive, or constructive, implies that a shared meaning system constructs our definitions of cultural entities and institutions. Culture is representational because it gives us a filter through which we extract meanings, or understanding. Our culturally-informed interpretation of our environment in turn provides us with guidelines for appropriate behavior, however, it is the motivational, or evocative, aspect that allows for individual variability. Some members of a culture will behave appropriately and some will not. Furthermore, not everyone has the same knowledge as there is variability in both knowledge and behavior, or what we do with that knowledge.
Research in cognitive anthropology has contributed theoretically and analytically to the concept of cultural models. Cultural models of a specific domain are thought to serve as blueprints for appropriate behavior, that is, they are collectively substantiated resources for guiding action in a given context (Dressler 2005). As information-processing tools, cultural models aid in individual construction of meaning (Shore 1996). Individuals will vary in their adherence to the shared model, therefore, intracultural variation will exist in any given domain. Within the paradigm of medicine in Mexico, researchers have noted variation in physicians’ and patients’ explanation and diagnosis of illness (Finkler 2000). Despite some variation, a shared model has been detected in several different domains in health care in Mexico (Baer et al. 2004; Finkler 2000). In a cultural consensus study of perceptions of risks for cervical cancer in American physicians, American-born women, American-born Latinas, and immigrant Latinas, Chavez (1995) found a continuum of variation with more than one identifiable model. Likewise, Baer et al. (2004) looked at explanatory models of AIDS in physicians and the lay community (i.e., not restricted to patients) in Mexico City and in a Texas border town and found sharing was patterned culturally rather than professionally. Finkler (2000) found that physicians in Mexico refer to “Mexican medicine,” which is patterned after the North American model, but molded into a distinctly Mexican cultural artifact (Finkler 2000). Thus medical systems are reflections of social organization and cultural beliefs in specific contexts (Baer et al. 2004; Hahn 1995; Finkler 2000; Norbeck and Lock 1987).

Despite the cultural patterning of medicine, variation in models of health and illness exists between the caregiver and the patient. Kleinman (1978) proposed that when models of illness differ between patient and physician, patients may adhere less to medical advice. If explanatory models of illness differ between professional and lay persons, then it is likely that
cultural models of health (e.g., a good pregnancy) will show the same pattern. Following this, it is possible that in a setting where two types of prenatal caregivers are available and practicing, more than one model of a good pregnancy will occur. Practitioners will comprise the most knowledgeable constituents of each model and patients will utilize elements of both models. In several regions of Mexico, two models of prenatal care have been identified, the “ethno-obstetric” model practiced by the midwives, and a “bio-obstetric” model practiced by the physicians and nurses (McClain 1975; Sesia 1997). The expectations of the two types of caregivers are culturally defined and, therefore, represent culturally-constructed models. Furthermore, in the reproductive health literature in medical anthropology, “authoritative knowledge” is a concept used to describe the type of authority produced and reproduced by biomedicine (Jordan 1997; Sargent and Bascope 1997; Sesia 1997). In a more general sense, persons with authority in a given domain, such as physicians and midwives in prenatal care, inform a specific model of that domain. However, the models are adhered to and reinforced by the greater society. Thus in a setting with multiple types of prenatal caregivers, there may be more than one model reinforced by the community.

Building on cognitive anthropology and the concept of cultural models, cultural consensus analysis (Romney et al. 1986) allows researchers to ascertain the degree of sharing of knowledge in a given domain of culture and to identify a shared cultural model of that domain. The consensus model represents the aggregate knowledge of a group of informants. Those informants whose knowledge falls nearer to the central tendency, however, are given more weight in the creation of the general model. Cultural consonance (Dressler 2007) then links the cognitive model identified through consensus analysis to individual behavior. Cultural consonance is a statistical measure of an individual’s ability to approximate the shared cultural
model identified through cultural consensus, or how much they behave like the model. Through the use of cultural consonance, culture can be operationalized and used in analysis. Research has shown that the greater the degree of proximity of individual behavior to the shared cultural model, the better their health (Dressler and Bindon 2000).

Cultural modeling has been used to examine variation within a sample and across samples with biomedical physicians and patients (Chavez 1995) and lay communities (Baer et al. 2004), and even with knowledge and behavior involving a folk illness (Weller et al. 1993). However, cultural modeling has not been used as an ethnographic tool for addressing prenatal medical pluralism in the reproductive health literature. Much of medical anthropological research has focused on models of illness, rather than health maintenance. Furthermore, reproductive health literature in anthropology has traditionally been qualitative, with notable exceptions (e.g., Chavez 1995). To address these gaps, this research will contribute empirically to cultural modeling of health and pregnancy as well as add to reproductive health research on cultural aspects of pregnancy using qualitative and quantitative methods.

**Cognitive Theory and Methodological Development in Mexico**

The notion of ethnographic validity was brought to the forefront of anthropological discourse by the Redfield-Lewis debate in the 1950s, motivating methodological changes in the ethnographic approach (Colby 1996; D’Andrade 1995). Applying linguistic methodology (e.g., Goodenough, Lounsbury, and Romney) to ethnography earmarked a paradigmatic shift toward the incorporation of cognitive methodology in anthropology and by the late 1950s and 1960s a new approach, “ethnoscientific,” was being developed and implemented in the field. One of the most important aspects of this type of research in anthropology is the ability to identify features (i.e., a classic feature model or domain of analysis such as in linguistics) that are salient to the
respondents in the group under study. Among the Tenejapa, Metzger and Williams (1963b) used ethnoscientific methodology to elicit a “Formal Ethnographic Analysis of Tenejapa Ladino Weddings.” Part of their approach involved the use of the frame elicitation technique which Young (1994) later used in the analysis of treatment decision making. Metzger and Williams continued to employ structural models of cultural and cognitive processes in their analyses of Tzeltal firewood and Tenejapa medicine and published an article on procedures that could be used in the study of native categories (Metzger and Williams, 1963a, 1966). They, along with Frake (1961) and D’Andrade et al. (1972), were instrumental in developing the frame elicitation technique that is part of the arsenal of current cognitive methodologies (Bernard 2002). Fabrega (1974) also used the frame elicitation technique in his studies of Maya and Ladino theories of disease in the Highlands of Chiapas.

Because Metzer and Williams’ (1963a, 1963b, 1966) work trailed the Redfield-Lewis debate and was carried out amidst a revolution in ethnography, their unique ethnographic practices received opposition from some members of the discipline (D’Andrade 1984). Whereas Redfield and Lewis had both conducted their fieldwork in the traditional manner of participant-observation with a heavy emphasis on observer interpretation, Metzger and Williams (1963b) relied solely on informant interviews to arrive at their analysis and conclusions. One methodological imprint of this particular study was the salience of the investigator-informant relationship to the interview and the findings (D’Andrade 1984). The investigators did what is now discussed as essential to an anthropological investigation: they established rapport with their informants. Furthermore, the interview questions reflected the concepts and categories of the informants, thus, they were able to elicit an elaborate system of classification of illness categories (Johnson and Sargent 1990). The complexity of this scheme would not have been
detected by observation and interpretation external from the individual, that is, as objective etic effort and impositions from the investigator.

Around the time of the birth of ethnoscience in the 1960s, other anthropologists were developing folk taxonomies to sketch relations between kinds of objects and conceptions and to hierarchically organize terms into configurational attributes (D’Andrade 1995). These developments led to a realization that culture has an underlying cognitive structure.

D’Andrade’s (1995) book, *The Development of Cognitive Anthropology*, describes the evolution of cognitive methodology and theory, especially in Mexico. An example of early work in cognitive anthropology is that of Berlin et al. (1974) in which the researchers examined folk classification of plants among the Tzeltal Maya in Chiapas. Their ethnographic approach was informed by the idea in psychology of a basic versus an extended range of terms in folk categorization (D’Andrade 1995). E. A. Berlin and B. Berlin have spent the past 30 years studying with the Highland Maya of Chiapas and have contributed a large body of knowledge in methodology and theory in applied, linguistic, cognitive, and medical anthropology (examples of their work include Berlin and Berlin 1996, 2005a, 2005b; E.A. Berlin, in press). B. Berlin also worked with A. K. Romney (1964) in a cognitive linguistic examination of Tzeltal numeral classifiers.

Decision models and narrative grammars became popular cognitive methodological approaches in the 1970s (Colby 1996). A milestone in both cognitive and medical anthropological methods during this time period was *Medical Choice in a Mexican Village* (Young 1994). Pivotal in the study of cultural domains, Young (1994) employed decision modeling and sophisticated statistical analyses to arrive at a decision-making model of treatment choice that purported to account for cultural patterns and individual variability. The first phase
of the study included interviews with a small number of informants (n=8) who were asked to list and sketch body parts and discuss the function of each part. From this information an open-ended interview schedule was created to further question the same individuals. The result of this phase was an understanding of the community’s knowledge of the body and its functions.

Using the frame-questioning technique of Metzger and Williams (1963b) and open-ended questions, Young (1994) then began delineating the structure of folk medical knowledge using a data matrix and cluster analysis to determine the distributional patterning of the data. Paired comparisons were used to discover the principal decision criteria, as well as case histories and treatment actions. Finally, they used hypothetical situations to understand the order of the use of treatment alternatives. The magnitude of this study is evident in the use of a sequenced variety of techniques, most of which were recently developed at the time of the study. What Young (1994) did for cognitive anthropology was to tie all of these techniques together into a useable format, and paved the way for the next decade of cognitive anthropology. The sequence of this methodology is similar to the sequence of techniques developed for cultural consensus modeling.

In the 1980s, cognitive anthropology was characterized by a prominent shift toward a more psychological theoretical approach (D’Andrade 1995) and the goal of understanding the meaning of disease to the people being studied (Johnson and Sargent 1990) (Young’s decision-making model was on the brink of this shift). The hallmark of cognitive research in anthropology today, cultural consensus modeling, officially debuted with the landmark article “Culture as consensus: A theory of culture and informant accuracy” (Romney et al. 1986). Consensus theory has been used fairly extensively in Mexico to study diabetes (Weller et al. 1999), community and physician explanatory models of AIDS (Baer et al. 2004), high blood pressure (Garcia de Alba et al. 1998), cultural knowledge of and response to tuberculosis (Baer
et al. 1999), and *empacho* (Weller et al. 1993), among other topics. These studies are all examples of research in medical anthropology in Mexico as well, illustrating the relevance of anthropology in Mexico to a variety of subdisciplines. The cognitive methods developed over time in the Mexican cultural context and described in this section not only illustrate a heuristic process, but lend to increased understanding of the rationale behind using cultural domain analysis to study not only shared cultural knowledge, but variation in that knowledge and understanding at the individual and community level. The current research project uses cultural domain analysis and cultural consonance analysis to examine shared knowledge in the domain of pregnancy, as well as variation in competence and behavior associated with that knowledge.

**Authoritative Knowledge**

Authoritative knowledge is the system of knowledge within a domain that is the most legitimated as a source of explanation and power (Jordan 1997). Association with technology assigns an authoritative role to biomedical practitioners because technological knowledge is a desired social value (Browner and Press 1997). In the technologically-controlled birth setting, the participant who “owns” the technological social artifacts that are required to manage the pregnant woman is, through ownership, defining and exhibiting authoritative knowledge and subsequently is the decision-maker. Therefore, control of pregnancy and childbirth, now seen as inherently pathological and unpredictable processes of nature, are taken from the expecting woman and given to the biomedical authority with the access to technology (Davis-Floyd 2003; Jordan 1997) and the legitimated means to provide social training (Davis-Floyd 2003; Wertz and Wertz 1989). More than one system of knowledge can exist in a given domain, with one system achieving authority with a resultant devaluing of the other system (Jordan 1997). The devalued system does not disappear, however, and may retain authority for specific matter. Different
ways of knowing have value for specific issues and situations (Jordan 1997; Sargent and Bascope 1997).

**Culture Change, Pluralistic Health Care Systems, and Intracultural Variation**

Pluralistic health care systems, defined as a setting in which individuals have access to both biomedical (modern) and traditional practitioners (Leslie 1976), give a context of study to the effects of culture change and intracultural variation as individuals make treatment choices based on a myriad of factors, and in which the constituent sectors may not carry equal authoritative weight (Baer 1989; Jordan 1997; Young 1983). Crandon-Malamud (1991), in a discussion of modernization and development, states that modernization refers to the changing of the social organization and worldview of a society into that of an industrialized middle class (e.g., Valenzuela and Valenzuela 1978). Development refers to industrialization and economic diversification, as well as increasing dependence on participation in the world market (Muñoz 1981). Using these definitions, Crandon-Malamud (1991) argues that development leads to modernization in a population and creates a change in worldview resulting in aspirations of Western science and commerce, including re-orientation of the traditional medical system. Jordan (1993), in discussing authoritative knowledge, states, “Once adopted, the standards of the medical model become the prevailing standards for judging adequate prevention, diagnosis, and treatment of all health problems, which leads to an automatic devaluation of indigenous practices” and translates to childbirth as a “redefinition of birth as a medical event” (76). Many times, agents of change originate in the upper classes that uphold the symbolic value of biomedicine as representational of modernization and progress, in opposition to traditional medicine which can be seen as backwards and ignorant. Degrees of modernization, or Westernization, are difficult to measure, however, DeWalt (1977) found that a more “Western”
world view and integration into “Western” culture was associated with increased use of biomedical physicians in Mexico.

Biomedicine has gained authority worldwide in the context of medical systems, however in doing so it has not eliminated pre-existing traditional systems of medicine. The use of two distinct methods of prenatal care and childbirth, such as bio-obstetrics and ethno-obstetrics, implies the belief in the authority of two types of caregivers, suggesting a wide range of variation in belief in a model. Crandon-Malamud (1991) points to the continued authority of traditional medicine for specific complaints for which biomedicine is not even considered or consulted. For example, Oths (2004) discusses the continued use of practitioners of bodywork in the Peruvian Andes, despite the availability of biomedical treatments. The bonesetters in her research occupy a specialized niche in the medical system, attending to complaints that biomedical practitioners do not have treatments for, and for which the shared model of treatment among the populace is to seek the assistance of a bonesetter (Oths 2004). Likewise, midwifery in Mexico occupies a similar position in the pluralistic reproductive context. Sesia (1997) shows that, during pregnancy, many women who seek the services of a midwife do so specifically for the prenatal massage, also a form of body manipulation (see also Oths 2002).

Previous research suggests a type of cultural sharing, or transformation, is occurring within reproductive health care and other areas of health care in Mexico (Baer et al. 2004; Finkler 2000; Jordan 1997; Sargent and Bascope 1997). Cultural sharing is a process of culture change illustrating one mechanism through which variation in a specified domain of analysis, such as prenatal care, can occur. Sargent and Bascope (1997) and Jordan (1997) describe different “ways of knowing” about birth in three cultures, including Yucatan, Mexico. The differences described are disseminated through the authority of the midwife and the authority of
the physician. A study in a rural indigenous community in Oaxaca (Sesia 1997) found that midwives trained by biomedical personnel in obstetrical care rarely implement the new skills into their traditional practice. The midwives acknowledge that the reason for continuing their traditional techniques is because the expectant mothers, their families, and the community all desire the traditional care of the *partera*, or midwife (Sesia 1997); in other words they share the same model. In a similar vein, Jordan (1993) describes a “community of practice” in Yucatan to discuss the way in which behaviors and knowledge are produced and reproduced in the sociocultural context of birth. McClain (1975) noted in Ajijic, Jalisco that women sought prenatal services from both types of caregivers, in addition to other traditional specialists. Other investigations in health care in Mexico have found that many factors are used in treatment decision-making, including type of symptoms, access, and cost, and lead to pluralistic use of health care providers (DeWalt 1977; McClain 1975; Young 1994).

This research recognizes that biomedicine is a cultural artifact (Hahn and Gaines 1995) and is, itself, an ethnomedical system. With this acknowledgment, the terms ethno-obstetric and bio-obstetric will be used throughout the dissertation to denote the traditional obstetric practice and the biomedical obstetric practice in Jalisco. In a setting with an ethno-obstetric model of care and a bio-obstetric model of care, there will be variation in individual adherence to and acceptance of elements of each model of pregnancy. Furthermore, external factors such as the elements of the sociopolitical context will affect an individual’s ability to approximate the shared cultural model. In other words, there will be intracultural variation in individual beliefs, attitudes, and behaviors. Therefore, it is likely there will be greater acceptance of elements of a bio-obstetric model by some members of the community and greater acceptance of elements of an ethno-obstetric model by other members. Elements of a bio-obstetric model may include
ultrasound technology, oxytocin shots to hasten labor and delivery, episiotomy, and testing for birth defects and sexually transmitted diseases. Elements of an ethno-obstetric model may include abdominal massage (*sobada*), avoidance of evil eye or *envidia*, perineal massage, collaborative decision-making, and food prescriptions or proscriptions. One shared model with a range of variation may occur, or two separate models with a mixture of sharing in between may occur. Thus, one aim of this study is to determine the patterning of intracultural variation within the entire sample.

Cassel et al. (1960) attempted to examine the impact of migration from a rural to an urban area on health. Earlier, Redfield (1941, 1953) described a typical rural-folk community as self-contained, self-supporting, maintaining tradition, and slow to change. In other words, the most isolated and rural areas are the last to modernize in a developing country. Cassel et al. (1960) discuss the health-related difficulties, specifically stress, that may occur when an individual with a traditional background is confronted with a modern lifestyle. For example, when a person from a rural area, similar to what Redfield described, migrates to an urban area, the “foreign” lifestyle may contribute to increased stress and resulting health problems. The stress resulting from culture clash, so to speak, is likely further enhanced by the poverty that many rural migrants face when moving to a city. It is typical for peripheral, lower-income neighborhoods to be inhabited by “transplants” from the countryside in many developing countries.

Intracultural variation is present in the generalized susceptibility to disease of a regional population (Nuckolls et al. 1972). Nuckolls et al. (1972) posit that this phenomenon could be a result of not having the appropriate background for understanding the circumstance or domain. For example, managers in a company who do not have a sociocultural background that prepared
them for executive demands and responsibility have elevated levels of stress compared to managers with appropriate education and family background (Christenson and Hinkle 1961). The incompatibility described by Nuckolls et al. (1972) is similar to cultural consonance. Applying this idea to pregnancy, women who share a model of what is needed for an optimal pregnancy, but whose background and situation do not allow achievement of the model, may make the individual more susceptible to “disease.” Nuckolls et al. (1972) equated “disease” in pregnancy with complications. Following this, another aim of this study is to determine if patterning of intracultural variation, stress, and cultural consonance is associated with regional location and education.

Cassel et al. (1960) argue that traditional cultural models may be limiting as an individual attempts to adapt to a modern environment. Furthermore, Crandon-Malamud (1991) points to an individual’s perception of their place within the larger sociopolitical context and their health care decision-making in pluralistic settings as not only governed by larger structural forces, but as an expression of their ethnic or social identity and an attempt to evaluate social relationships. Her synopsis of social relations in medical pluralism reiterates the connection between power and social change that Handwerker (1990) discusses in Births and Power: Social Change and the Politics of Reproduction. Maneuvering through a medical pluralistic context is not just an expression of social identity, but also a consequence of where the individual fits into the larger social, political, cultural, and economic arena. “In a medically plural environment, medical ideology is not a single logical construct but rather a series of options that permit the negotiation of social relations” (Crandon-Malamud 1991:139). One aim of this project is to account for the social, cultural, political and economic everyday circumstance of the participants to approach the study of pregnancy from a holistic biocultural perspective.
This research builds upon theories of biocultural medical anthropology, authoritative knowledge in medically pluralistic settings, and culture change and intracultural variation to assess the relationship between cultural models, cultural consonance, and health. Participants are drawn from four different types of urban to rural settings from across the socioeconomic strata, and from biomedical clinics, traditional midwives, and through word of mouth to increase the chances of capturing measurable degrees of variation in a cultural model of a good pregnancy.
CHAPTER THREE: STRESS AND SOCIAL SUPPORT

Stress Theory and Research

The first recognition of stress as an identifiable factor in health is credited to Hans Seyle in 1936, in which he defined stress as a non-specific response to “noxious stimuli” (Ice and James 2007). The study of stress has matured over the past 70 years, passing through various stages of theoretical development (Ice and James 2007). Cohen et al. (1997) point to Adolf Meyer as recognizing life crisis events as stressors and Harold Wolff as linking life crisis events and illness in the 1930s and 1940s. Examination of stress as a non-specific response continued into the 1960s when Lazarus and colleagues began to posit stress as a process between an individual and the environment, with individual mechanisms of appraisal and coping playing a role in the body’s reaction (Ice and James 2007; Lazarus 1984; Lazarus and Folkman 1984). Mason (1974, 1975) countered the non-specific response definition of stress by demonstrating variations in response according to stressor and environmental conditions (Ice and James 2007). Cassel (1976) added to stress theory development by arguing that an individual is not thrown into a pathological state of stress, but rather is made susceptible to disease through stimulus and individual reaction. Chronic stressors were identified as differing from acute stressors in the way the body processes and reacts to them (Pearlin 1989).

As these researchers continued to add to and reformulate stress theory, cognitive and social factors were increasingly recognized as players in the stress process. Lazarus (1999) proposed not just focusing on major life events, but also daily events, and how we cope with them, introducing a cognitive aspect to stress theory that is individualized and informed by
individual contexts of living. Pearlin (1989) emphasized the critical role of social values as mediators in the stress process. Lazarus (1999) cautioned against relying on the sociocultural context to explain the interaction of stress and the individual, arguing that such an approach leaves out the individual and assumes a blanket reaction to stress in the human population. However, the sociocultural context cannot be discarded and a more integrated approach to the study of stress will account for both the individual and the environment in which the individual lives a daily existence.

Dressler and Bindon (Bindon et al. 1991; Bindon et al. 1997; Dressler 1991, 1995; Dressler and Bindon 1997, 2000) have brought anthropological, biological, sociological, and psychological concepts together in the study of stress in an effort to account for the sociocultural context and the individual. Dressler argues that culture influences several aspects of the stress process, including the meaning and patterns of stressors, as well as coping mechanisms. Cultural models reveal how people think about a domain and cultural consonance shows how well they are able to live the way they think they should. Dressler and Bindon’s (1997, 2000) work with lifestyle incongruity in the U.S. demonstrates that dissonance with a shared cultural model of lifestyle is linked to negative health outcomes, such as high blood pressure. Bindon et al. (1991; 1997) show a similar trend among American Samoans. Likewise, Dressler and colleagues (2005) have applied this same research strategy to a population in Brazil and found comparable results. McDade (2001) examined lifestyle incongruity and cell-mediated immunity in Samoan adolescents and found that incongruency is associated with higher levels of Epstein-Barr virus antibodies, an adaptive response of the immune system. Other anthropologists have shown how cultural processes not only influence our thinking about stress and the meaning of stressors, but also how stress becomes embodied and expressed as a cultural syndrome (Jenkins and Valiente
Oths (1999) demonstrated that individuals residing in households that do not meet the culturally-sanctioned gender ratio will be forced to assume more responsibilities to ensure household functioning. For many people, mostly women, this incongruency with cultural expectations and the resulting increase in workload manifests as a culturally-bound syndrome characterized by fatigue and chronic pain (Oths 1999).

Defining stress has been problematic in the past across the disciplines and debate has resulted in advocates of separate definitions and avenues of research for separate disciplines (Ice and James 2007). However, such an approach would fail to garner a comprehensive assessment of the psychophysiological process of stress and leave aggregate components of the entire picture “unreconciled.” Cohen et al. (2000) define stress as an adaptive response to an event; a process involving the interaction of the environment and the individual. This dissertation borrows the definition of Cohen and that put forth by Ice and James (2007:12-13) that defines stress as “a process by which a stimulus elicits an emotional, behavioral, and/or physiological response, which is conditioned by an individual’s personal, biological and cultural context,” adding to the context the elements of the social, political, and economic. Hoffman and Hatch (1996) differentiate between stress as the recognition of an insult and distress as a negative emotional state resulting from that recognition.

Stress can be measured in a number of ways, both biologically and psychosocially. Measurement, or examination of stress, can be classified in three groups: environmental, psychological, and biological. Biological stress is the physiological response, environmental stress relies on an objective assessment of environmental events or experiences that are associated with adaptive demands, and psychological stress relies on an individual’s subjective assessment of their own abilities to cope with demands of events and experiences resulting in an
affective response to their evaluation (Cohen et al. 2000). This research will incorporate a measure from all three categories.

Lazarus and Folkman’s (1984) stress framework purports that cognitive appraisals and coping are critical mediators in an individual’s stress response. When a person’s primary appraisal of a threat overrides the secondary appraisal of coping, a person experiences distress (Folkman et al. 1986). Primary appraisals are influenced by attitudes and measures such as mastery and optimism, while secondary appraisal, or coping, is dependent upon a person’s resources, such as social support (Gurung et al. 2005). Both primary appraisals and secondary appraisals are filtered through cultural knowledge for meaning and appropriate response. As a liminal state, a time when a woman is in transition from one identity to another, pregnancy and motherhood are life events that potentially make this a time of heightened vulnerability to stress and increased susceptibility to the effects of the appraisal process (Park et al. 1997).

In terms of the psychophysiological pathway between a stressor and the body’s response, measurements have included emotional/behavioral responses, hormonal variation in the sympathetic adrenal medullary system (SAM), hormonal variation in the hypothalamic pituitary adrenal axis (HPA), physiological changes in the cardiovascular system and enhanced immune responses (Ice and James 2007). This research will examine emotional/behavioral responses with measures of perceived stress (PSS), a subjective nonspecific measure, and pregnancy-related anxiety (PRA), a subjective measure of state anxiety, and altered immune response measured with Epstein-Barr virus antibodies (EBV), an objective measure. Furthermore, environmental stressors as stressful life events are included in the analysis to explore its relationship with the subjective and objective measures.
Acute stressors are generally classified as such because of their time-specific nature, in other words, they are events that happen out of the ordinary. Stressful life events, such as a death, job loss, or an illness are considered acute stressors. Chronic stressors are not extraordinary events, but recurring events associated with everyday existence. Examples include poverty, marital stress, job stress, other stressful social relationships, and status incongruity. As mentioned before, this research accounts for major stressful life events, but also examines social relationships, lack of social resources and socioeconomic status as possible sources of chronic stress. While acute versus chronic stressors is a useful heuristic, it should be noted that in everyday life separating them may be difficult.

Two types of immune function exist in the human body: cell-mediated immunity and humoral immunity. Cell-mediated immunity is the “activity of T lymphocytes that function to eliminate infectious agents located within a cell,” and does not involve the production of antibody (Rabin 1999:12). Humoral immunity refers to the “total amount (sic) of antibodies present in plasma that provide protection from infectious agents not located within tissue cells,” (Rabin 1999:14). Plasma is the liquid portion of the blood and the B lymphocytes produce the antibodies found in plasma (Rabin 1999). Antibodies are also called immunoglobulins (Ig) or gamma-globulins. There are several different types of T lymphocytes. T lymphocytes with the CD4 surface marker produce soluble cytokines (proteins involved in the regulation of other cells participating in immune activity) that contribute to antibody production by a B lymphocyte. These CD4 T lymphocytes are subdivided into two classes: Th1 and Th2 (Rabin 1999). Th1 and Th2 lymphocytes produce different cytokines and have different functions (Rabin 1999). Th1 cells are critical in cell-mediated immunity and Th2 cells are critical in humoral immunity.
(Challis et al. 2009). This dissertation examines Epstein-Barr virus antibody levels as a measure of cell-mediated immunity.

Stress alters the activation of the T lymphocytes and subsequent cytokine production, thereby altering immune function (Rabin 2005). The mechanisms underlying the psychophysiological pathway of stress and immunity are not fully understood. Research points to possible involvement of both the sympathetic nervous system and HPA activation (Lovallo 2005). The Epstein-Barr Virus (EBV) is a herpes virus found around the world to which approximately 90 percent of adults in industrialized nations and 100 percent of adults in developing nations show exposure (Henle and Henle 1982; McDade 2007). Like other herpes viruses, such as chicken pox, EBV remains in the body in a latent state that requires adequate cell-mediated immune function to keep it in check. When an individual is exposed to environmental stress, such as psychosocial stress, function of the immune system is suppressed. This could lead to viral reactivation due to decreased immune surveillance by the T lymphocytes (Lovallo 2005), allowing the release of viral antigens into circulation, likely resulting in a humoral antibody response (Glaser et al. 1999; McDade 2007). Higher cortisol response to acute stressors appears to be significantly correlated with EBV antibody levels, indicating the most stress-reactive individuals have increased reactivation of the latent virus (Cacioppo et al. 2002; Larson et al. 2001; Lovallo 2005). Thus, lower cell-mediated immunity is associated with increased EBV antibody titers (McDade 2007). McDade (2007) notes that this interaction may seem counterintuitive because the increase in EBV antibody titer (a humoral response) is portrayed as evidence for a decrease in cell-mediated immune function, however, he points out that the function of cell-mediating processes is to keep viruses in a latent state. Therefore, when
a failure occurs in the cell-mediated process, the second line of defense, the humoral response, is stimulated into action (McDade 2007).

Stress has been shown to alter immune function. Specifically research has demonstrated significant decreases in numbers of T, B, and natural killer (NK) cells, suppressed lymphocyte proliferation and cytotoxic activity, and lower levels of secretory IgA and IgM (antibodies) (Herbert and Cohen 1993; McDade 2007). The EBV antibody model has been effective in studies of stress-related immunosuppression. Based on the meta-analysis by Herbert and Cohen (1993), McDade (2007) makes several “cautious conclusions…:1) objective events appear to have greater effects than self-reported events, 2) long-term stressors have more consistent negative effects than acute stress, and 3) social and non-social stressors have different immunological consequences” (185).

Increased levels of EBV antibodies are associated with a range of stressors such as medical school exams (Glaser et al. 1987, 1993), self-report of poor quality marriage for both men and women (Kiecolt-Glaser et al. 1987a, 1988), recent separation or divorce (Kiecolt-Glaser et al. 1987a, 1988), caring for a family member with Alzheimer’s disease (Kiecolt-Glaser et al. 1987b), self-reported measurements of anxiety and defensiveness (Esterling et al. 1993), and lifestyle incongruity in Samoan adolescents (McDade 2001). EBV antibody levels can provide a measure that is more akin to chronic stressors because they are not subject to short-term fluctuation, diurnal variation, or acute events. A single sample can be incorporated into a research design and used as an immunological measure of chronic stress (McDade 2007). The time that elapses between exposure to a stressor and EBV antibody response is anywhere from days to weeks (McDade 2007). Therefore, repeated exposure to stressors can prolong increases in EBV antibody titer. Cultural consonance, or the ability to behave in a culturally-appropriate
manner in a given domain, is associated with stress (Dressler 1991, 1995; Dressler and Bindon 1997, 2000). This dissertation examines the relationship between cultural consonance with a shared cultural model of a good pregnancy and measures of EBV antibody levels during pregnancy.

Although this dissertation examines EBV antibody levels as a marker of psychosocial stress, particularly chronic stress, it is useful to describe two other models of EBV and stress. The first of the two models is posited by Worthman and Panter-Brick (2008). They propose in populations where the allostatic load is high due to extraordinary adverse conditions, everyone may be experiencing a reduction in cell-mediated monitoring of EBV antigens. In this case, EBV antibody levels may actually be a marker of immunocompetence, where those individuals with elevated levels are exhibiting an ability to mount an immune response. Put another way, healthier individuals (e.g., with more energetic resources, etc.) can afford to generate a stronger humoral antibody response. The second model is unpublished, but based on analyses that do not appear to follow the patterns of the other two models (Jason deCaro, personal communication). These analyses come from research in populations with a high pathogen load (e.g., viruses, parasites, bacteria, etc.) where EBV levels may be an index of individual exposure to pathogens. In these cases, cell-mediated monitoring of antigen levels may decrease while the body is working to fight off other infections. The result is increased antibodies in response to the increased antigens.

Stress during pregnancy has been examined in countless studies across disciplinary boundaries and has been found to negatively impact birth outcomes (Glynn et al. 2001; Glynn et al. 2004; Glynn et al. 2008; Lobel 1994; Matthews and Rodin 1992; Oths et al. 2001; Paarlberg et al. 1995; Rini et al. 1999; Rondo et al. 2003; Schulte et al. 1990; Wadhwa et al. 1996).
Current research suggests that pregnancy buffers the physiologic response to environmental stress (DiPietro et al. 2005). Pregnant women exhibit attenuated responses to administration of endogenous corticotrophin-releasing hormone (CRH) (Schulte et al. 1990). In comparison studies to non-pregnant women, pregnant women report less pain (Saisto et al. 2001) and fail to mount a cortisol response to cold pressor stimulation (Kammerer et al. 2002). Matthews and Rodin (1992) found blunted blood pressure responsivity to cognitive stressors in pregnant women. DiPietro et al. (2003) demonstrated decreasing maternal heart rate and electrodermal responses to repeated exposure to cognitive challenges from 24 to 36 weeks of pregnancy. Thus, evidence is consistent across studies for a diminished physiologic response to stress during pregnancy.

Evidence for changes in psychosocial stress indicators during pregnancy is less consistent (DiPietro et al. 2005). Increases in anxiety (DaCosta et al. 1999; Keenan et al. 1998) and depression (Hoffman and Hatch 2000) have been reported by some researchers, while others have found no increase (Heron et al. 2004). Glynn et al. (2004) found that women perceive negative events as more stressful in the first trimester than in the last trimester of pregnancy. A lack of association between psychological indicators of distress and levels of physiological biomarkers, such as cortisol, CRH, and catecholamines (Petraglia et al. 2001), or a reversal of a normal expected association (Dorn et al. 1993), also lends support for a physiologic buffering effect on psychosocial stress during pregnancy (DiPietro et al. 2005). Despite inconsistencies in studies of changes in psychosocial stress during pregnancy, there is a clear association between experiencing psychosocial stress and adverse birth outcomes. Low birth weight is associated with increased perception of job strain (Oths et al. 2001), perceived stress and anxiety (Rondo et al. 2003), and anxiety, perceived chronic stress, and life event distress (Lobel et al. 1992).
Psychosocial stress is also associated with preterm delivery, or gestational age and weight for gestational age (Rondo et al. 2003; Wadhwa et al. 1993). Although pregnancy outcomes were not yet available during this research, this dissertation approaches the study of stress in pregnancy with the understanding that findings could have implications for better understanding of the cultural aspect of stress and how this may influence pregnancy outcomes.

Three possible mechanisms for the pathophysiological pathway of stress during pregnancy have been hypothesized in the literature (Paarlberg et al. 1995): behavior as a coping mechanism, such as smoking or drinking alcohol; stress hormones such as catecholamines, cortisol, and neuropeptides by the pituitary; and immunologic processes, known to be influenced by psychosocial factors through neural and endocrine mediating pathways. This dissertation focuses on the third, the immunologic processes associated with psychosocial stress. EBV antibodies are measured once during pregnancy, as are perceived stress and pregnancy-related anxiety, and a life events scale serves as an acute measure of environmental stress.

The constructs most often assessed in pregnancy research are life crisis events and state anxiety (Gurung et al. 2005; Lobel 1994). Despite a clear association between maternal stress and adverse outcomes, findings are inconsistent and relatively modest (Glynn et al. 2008). Two widely read reviews of the stress and birth outcome literature (Lobel 1994; Paarlberg et al. 1995) point to several factors that could explain the discrepancies, including the manner in which prenatal stress is operationalized, variations in the time of study during the prenatal period, varying definitions of birth outcomes, and failure to account for other prenatal risk factors (Glynn et al. 2008). Glynn et al. (2008) explore yet another possible factor: changes in sensitivity to stress during pregnancy. Research has shown that: 1) stressors experienced earlier in pregnancy have a greater physiological and psychosocial impact on birth outcomes than those
experienced later in pregnancy (Glynn et al. 2001, 2004; Matthews and Rodin 1992; Schulte et al. 1990); and 2) that an increase in perceived stress during pregnancy is associated with increased risk for preterm delivery (Glynn et al. 2008). The original aim of this dissertation was to obtain two interviews with each participant and measure psychosocial and physiological stress at both times. However, the scope of such a research design would have required a research team that was unattainable due to logistic and economic constraints. Despite the limitation of having gathered only one measure during pregnancy, there is sufficient evidence (e.g., de Weerth and Buitelaar 2005; McDade 2007) to conclude that inter-individual variability in the sample will be broad enough to capture associations and interactions between stressors, mediators, and stress levels.

**Perceived Stress, Pregnancy-Related Anxiety, and Cell-Mediated Immunity**

The Perceived Stress Scale (PSS) (Cohen et al. 1983) is a subjective measure of the degree to which situations in one’s life are perceived as stressful. Cohen et al. developed the 14-item PSS based on Lazarus’s theory of stress appraisal (Lazarus 1966; Lazarus and Folkman 1984). The instrument is a self-report measure. The PSS is adaptable to any cultural context because it compares participants within a sample and is not informed by external diagnostic degrees of stress. In Cohen et al.’s (1983) original work, the PSS predicted depressive symptomology, physical symptomology and social anxiety in a sample of college students and was significantly associated with life stressors. Cohen and Williamson (1988) developed a 10-item version of the PSS which measures the degree to which one perceives aspects of one’s life as uncontrollable, unpredictable, and overloading. Each item refers to an emotion or feeling over the preceding month for which the respondent rates on a 5-point Likert scale of never to very often, resulting in a total possible score of 40. Roberti et al. (2006) conducted an exploratory
factor analysis of the PSS-10 and identified a two-factor structure measuring perceived helplessness and perceived self-efficacy. They used a sample of college students and determined the internal constructs and instrument validity to be sufficient for use in that sample (Roberti et al. 2006).

Both the PSS-14 and PSS-10 have been used in many contexts over the past two decades, including during pregnancy and in Mexico. Glynn et al. (2008) used a modified 12-item version of the PSS-10 measured once during the second trimester and once during the third trimester to determine if changes in perceived stress were associated with preterm delivery, and at what point the risk was higher. The research team also examined pregnancy-related anxiety (PRA) (Wadhwa et al. 1993) at the same points in time during the prenatal period. They found that an increase in perceived stress and anxiety from the second to the third trimester during pregnancy predicted preterm delivery. The increase in either variable was more important than the level of the variable during the second or third trimester (Glynn et al. 2008). They concluded that women who exhibit an inability to adapt to stress over time, such as in a normal pregnancy, are more likely to deliver preterm.

Physiological stress reactivity is dampened during pregnancy (de Weerth and Buitelaar 2005; DiPietro et al. 2005). Psychological stress is also increasingly buffered as a pregnancy progresses, with women later in pregnancy perceiving events as less stressful than those earlier in pregnancy (Glynn et al. 2001; Glynn et al. 2004). If stress continues into the third trimester, it may be more advantageous for the mother to carry the pregnancy to term to avoid risks associated with miscarriage late in pregnancy (Glynn et al. 2008). Glynn et al. (2008) attribute the attenuation of the adverse effects of psychosocial stress on pregnancy outcomes to the physiological buffering mechanism. Therefore, Glynn et al. (2008) argue that women who do
not experience this adaptive effect of a dampening of physiological response to stress are more likely to fall into the failure-to-reproduce model and deliver preterm in the face of psychosocial stress. Other researchers argue that the functional aspect of stress buffering in pregnancy is unknown (DiPietro et al. 2005). Although pregnant women have a reduced physiological response compared to non-pregnant women exposed to the same stimuli, de Weerth and Buitelaar (2005) maintain that sufficient inter-individual variability exists in a sample to continue to study the relationship between responsivity patterns and psychosocial variables, as well as other variables such as pregnancy outcomes.

The Pregnancy-Related Anxiety Scale (PRA) was developed by Wadhwa et al. (1993) specifically for use in pregnancy research (see Phase II interview schedule in Appendix C). It is a measure of state anxiety as it is specific to emotions that may be experienced during pregnancy. The PRA is a 10-item, 4-point answer, self-reporting instrument that assesses a woman’s feelings about her health during pregnancy, the health of the baby, her feelings about labor and birth, and her ability to birth normally. PRA has been utilized in several studies with results demonstrating a propensity for shortened gestation (i.e., preterm delivery) in women who have higher levels of anxiety (Glynn et al. 2008; Rini et al. 1999; Wadhwa et al. 1993). Perceived stress and pregnancy-related anxiety are found to be significantly correlated with each other, however, the correlation is not perfect, thus indicating measurement of differing dimensions of psychosocial stress (Glynn et al. 2008).

Immunity has received a great deal of attention in obstetric research because of the maternal-fetal interface. Simply put, the fetus carries roughly half of its makeup from the father, thus presenting a foreign substance into the mother’s body. Under normal circumstances, the body would attempt to rid itself of the foreign substance, however, there is a peculiar physiologic
regulation of the innate immune response to prevent rejection of the fetus (Challis et al. 2009). A recent study by anthropologist Elizabeth Miller (2009) found changes in serum immunity during pregnancy that vary according to type of immune response. She examined four serum immune factors in an analysis of peripheral immune function: measles antibody titer, lymphocyte count, white blood cell count (WBC), and C-reactive protein levels (CRP) (Miller 2009). In the body, there are two types of immune systems: innate and adaptive. The innate immune system protects the body from infection and is constantly surveying for infectious agents. A rapid defense is mounted each time it encounters a pathogen. Adaptive immunity, on the other hand, is based on memory. The EBV antibody response to the virus is an adaptive response because the T lymphocytes remember the antigen after initial exposure. Whereas an innate immune response is immediate and quick, an adaptive immune response can take 4-5 days for activation (Rabin 2005). Miller (2009) found that the innate response (CRP and WBC) increases in pregnancy while the adaptive response (measles antibody titer and lymphocyte count) decreases. Her findings could have implications for this dissertation as EBV antibodies represent adaptive response and CRP is an innate response. CRP levels are analyzed as an indicator of active infection here to control for the possibility of an acute EBV infection as opposed to stress-related immunosuppression (McDade 2007). Participants with high levels of CRP indicative of active infection are removed from the analysis because it is unknown whether their EBV antibody levels are associated with the infection. More recently, CRP has been used in population-based studies as a marker of inflammation because it is an inflammatory protein produced by liver hepatocytes after activation by messenger cytokines (McDade 2007).

Stress-related immunity has not been studied in pregnancy, as far as I am aware. This research will add to the understanding of both immune response and stress during pregnancy and
help to determine if EBV antibody levels are validated as a measure of chronic stress during pregnancy. Additionally, the findings of this dissertation will add to the literature on the relationship between physiological and psychosocial stress.

**Social Support**

Adaptation is a physiological response linked to social and cultural influences. Social relations, both on a macro political-economic level and a micro interpersonal level, can affect physiological adaptation (McElroy 1996; Leatherman 1998; Thomas 1998) and psychosocial adaptation (Durkheim 1951). A pregnant woman has many social relationships that are part of her social support network, including relationships with her prenatal caregiver, friends and family. Additionally, she is located in a larger sociopolitical context by factors such as her socioeconomic status. Depending on the degree to which these relationships support or hinder a woman in achieving the culturally-constructed model of a “good” pregnancy, she may exhibit psychosocial and/or physiological adaptation in the form of stress. Therefore, an overall goal of this study is to determine if social support resources and family interaction moderate the effect of consonance (i.e., individual ability to achieve the shared model) on individual maternal stress.

Social support is defined in a variety of ways in the social science literature, however, this research follows the lead of Cohen and Syme (1985) that social support is the body of resources provided by others, in particular resources from family and friends. Generally, social support is subdivided into emotional, informational, and instrumental support. Emotional support comes from love and affection from persons with close emotional ties (Harley and Eskenazi 2006). Informational support comes in the form of information or advice, usually providing guidance or direction for behavior and decision-making (Berkman et al. 2000).
Instrumental support is that which is tangible, such as money, clothes, food, childcare, help with household chores, et cetera. (Will 1985).

Studies of social support are characterized by the use of two types of social support measures: 1) structural measures that count network size, frequency of contacts and social relationships; and 2) functional measures that account for support perceived available and received by the individual (Harley and Eskenazi 2006). Berkman et al. (2000) argue for a concept of social support that begins with the larger sociopolitical and cultural context shaping and defining support networks, but also accounts for access to resources and social support and influence. They maintain that health is influenced by social support through mechanisms of behavior, psychology, and physiology. Dressler et al. (1986) discuss a multi-level system which begins with social organization, defined as observable patterns of social behavior. A social network is a subset of people that a person interacts with regularly. The social support system is a subset of the social network that an individual can turn to in times of felt need. A current movement in anthropology is fueling the inclusion and increased analysis of social networks within the larger research design of medical anthropological studies.

Durkheim (1951) was one of the first to examine the relationship between social networks and health, positing that it is the social context which produces a suicide victim and not individual faults. Most researchers point to the beneficial effects of social support in health issues, independent of and controlling for other variables such as biology (Broadhead et al. 1983; House et al. 1988). Social support is shown to have a positive effect on disease recovery (Berkman 1995), reduce mortality risks (Forster and Stoller 1992), moderate stress (Dressler et al. 1986), and improve cognitive function (Berkman 2000). In pregnancy, social support has been found to buffer both psychosocial and physiological stress (Dejin-Karlsson and Ostergren...
reduce rates of pregnancy complications (Norbeck and Anderson 1983; Nuckolls et al. 1972), improve birth weight (Collins et al. 1993; Feldman et al. 2000), buffer the effects of stress on gestation (Lobel 1994; Rini et al. 1999; Wadhwa et al. 1993), and buffer the effect of life stress on emotional disequilibrium (Norbeck and Tilden 1983). Most studies of social support focus on the benefits of social relationships, however, a notable few have highlighted the potential negative impact of social support on physical and mental health (Cramer and McDonald 1996; Seeman 1996; Wellman 1981).

Early studies of social support and pregnancy posit social support as a buffer for negative perceptions and emotions that moderates the effect of stress on pregnancy (Harley and Eskenazi 2006; Nuckolls et al. 1972). According to Harley and Eskenazi (2006), other studies (e.g., Collins et al. 1993; Norbeck and Anderson 1989) show a positive association between social support and pregnancy outcomes regardless of stress levels, suggesting that social support independently promotes pregnancy health. Cramer and McDonald (1996) find that in spite of the overall benefits of social support in pregnancy, especially from family, stress levels can also be negatively impacted by the presence of immediate kin. Three possible mechanisms for the relationship between social support and stress during pregnancy have been identified: 1) by buffering, or moderating, the physiologic response to stress; 2) by directly affecting the neuroendocrine system resulting in enhanced psychological and emotional response; and 3) by promoting beneficial health behaviors (Berkman et al. 2000; Cohen et al. 2000; Harley and Eskenazi 2006; Wadhwa et al. 1996).

Social organization is unique to a given setting and is culturally defined. In Mexico, the extended family, in addition to the nuclear family, has traditionally been a source of support of all kinds, including emotional, informational, and instrumental (Clark 2001; Dressler et al. 1986;
Dunkel-Schetter et al. 1996). Social support can be a source for child care, financial assistance and emotional support for mothers (Kana’iaupuni 2005). There are several features and types of supportive relationships that an individual may have in Mexico: nuclear family, extended family, compadrazgo, confianza, and reciprocal exchange (Dressler et al. 1986; Kana’iaupuni et al. 2005; Lomnitz 1977).

Reciprocal exchange “refers to a transfer of commodities or services between groups or individuals” occurring in both directions (Kana’iaupuni 2005:1140). Emotional and economic exchanges can occur between friends, family and neighbors (Kana’iaupuni 2005). The social network is critical as a resource for exchange relationships because families draw on them for security (Lomnitz 1977). Lomnitz (1977) argues that reciprocal exchange is intertwined with, and also partly obscured by, kin relations because a household can function as a reciprocity network, but the network may also contain non-kin neighbors and others. Confianza is established between two people as an honored form of friendship, based on trust and a “mutual desire and disposition to initiate or maintain a relationship of reciprocal exchange,” (Lomnitz 1977:134). It is an integral part of the system of reciprocal exchange and is established before an exchange ever takes place (Kana’iaupuni 2005). Compadrazgo is a social institution in Mexico of ritual kinship related to confianza, but usually formed when a friendship of confianza becomes very close or intimate (Kana’iaupuni 2005). It is an institutionalized system of godparenting in which the comadre or compadre is responsible for economic support during important events in a person’s life, especially during childhood (Kana’iaupuni 2005; Lomnitz 1977).

Kana’iaupuni (2000) argues that relationships based on reciprocity are formed and maintained among friends, neighbors, and kin as a means of emotional and economic security. The argument is built upon that of Lomnitz (1977) who posited that exchange relationships are
necessarily derived from social networks because of the need to survive. Studying poor urban Mexican families, Lomnitz (1977) found that social networks comprised of family and friends were vital sources of support, both material and non-material, to marginalized populations. These findings have been supported in subsequent studies of urban and rural poor in Mexico (Kana’Iaupuni 1995; Logan 1981).

To measure perceived social support, Dressler et al. (1986) asked individual participants to name each type of person (relatives, friends, neighbors, compadres) they could turn to in specific situations. Furthermore, they included a structural measure, an index of social contacts, that operationalized social contacts and frequency of contacts. The study found that the quantity and frequency of social relationships does not predict blood pressure, but the perception of social support does. Perceived social support varies for men and women, as well as the effects of social support on stress. For women, support from friends is related to higher diastolic blood pressure. The authors discuss the importance of family support in Mexican culture and suggest that seeking emotional support outside of the family may indicate strained relations between the participant and family.

Kana’Iaupuni et al. (2005) examined types of social support networks that would provide more social support resources for mothers in Mexico. Their study highlights the continued importance of the role of family in support networks in Mexico. They found that larger extended networks lead to more support, possibly because of a diversified group of resources. Social network was measured in their analysis by size and interaction. Network size included number of immediate kin and extended kin and interaction was a measure including spatial proximity, frequency of contact, and coresident ties. Emotional and financial support served as the measure of social support. A surprising find is that although both emotional and financial support
increase with the number of extended kin and coresident ties, larger numbers of immediate kin deplete financial support (Kana’i’aupuni et al. 2005).

The measures of social support used for the purposes of this research draw on both the work by Dresser et al. (1986) and Kana’i’aupuni et al. (2005). To assess the social network, perceived social support and social interaction are examined. Perceived social support is measured by summing the number of network ties that a person names as someone they can turn to in specified situations. Geographic proximity to family, frequency of contact with female relatives, and coresidence with kin are summed to form a measure of social interaction, based on social relationships. Each of these two variables are included in analysis of the relationship between cultural consonance and stress in pregnancy.
CHAPTER FOUR: PREGNANCY AND CHILDBIRTH

Introduction

The anthropology of reproduction can serve as a telescope, peering into the sociocultural processes underlying a society. Reproductive behavior is shaped by these processes and the rituals of birth become a reflection of the broader sociocultural context (Browner and Sargent 1990; Davis-Floyd 2003; Jordan 1993; Kay 1982). The biological process of reproduction is the physiological production of the human species and includes all aspects of reproduction, such as menstruation, coitus, conception, gestation, pregnancy, parturition, infertility, abortion and menopause (Browner and Sargent 1990). Karl Marx was the first to point out that reproduction as a biological process is itself a social artifact, determined by both the material conditions within which conception and birth take place, as well as the social arena that governs beliefs and behaviors (Browner and Sargent 1990; Marx and Engels 1970; Petchesky 1984). The sociocultural process of reproduction is noted as the activities and relationships that perpetuate social systems through the cycle of production-circulation-consumption-production (Browner and Sargent 1990; Harris and Young 1981). Browner (2000) notes that, unlike other species, the human female becomes pregnant and gives birth within the material and social conditions contextualizing her daily existence. This context includes political-economic structures such as social class, access to and type of health care, employment, education, and types of available birth control (Browner 2000; Ginsburg and Rapp 1995). The reproductive context is further clarified by the power differentials in the individual’s relationship to the macro political
economic forces, as well as her microlevel relationships in everyday life (Handwerker 1990; Homans 1985).

Pregnancy, childbirth, and the postpartum period are biological occurrences involving the same physiological processes for every woman in the world. However, this biological fact must be understood as a social event shaped and defined within a specific sociocultural context (Anderson and Bauwens 1982; Browner and Sargent 1990; Davis-Floyd 2003; Ford 1964; Jordan 1993; Kay 1982; Kitzinger 1978; MacCormack 1982; Mead and Newton 1967; Newton and Newton 1972). Culture-specific social relations form the context and event of pregnancy and birth. The social players involved include partners, family, neighbors, reproductive health care providers, religious authorities, and political decision-makers (Browner 2001; Greenhalgh 1995; Handwerker 1990). Evidence of a scholarly understanding of the social aspects of birth is found as early as 1545 in Thomas Raynalde’s *The Byrth of Mankynd* (Wertz and Wertz 1989). Current scholarly thinking on reproduction, especially in the social sciences, widely acknowledges that a society’s system of birth is created through its conceptualization of the event, which is influenced by the social organization of that society (Davis-Floyd 2003; Jordan 1993; Kay 1982; Martin 1987). This conceptualized definition of reproduction then becomes the ideology through which routines and procedures surrounding the event of childbirth are justified. Cross-cultural comparisons reveal that all cultures have birth rituals and these rituals vary widely from one culture to another (Kay 1982; Jordan 1993). The socioculturally filtered response to the perceived uncertainty and danger of childbirth produces a unique set of practices and beliefs, or rituals, in each culture that reinforce the dominant model of reality. Indeed birth practices within any culture “appear packaged into relatively uniform, systematic, standardized, ritualized, even morally required routine” (Jordan 1993:4).
This chapter first gives a brief overview of the history of the anthropology of reproduction, moving into the central focus on pregnancy and childbirth. The rituals and social contexts of birth in traditional non-Western societies are then discussed, highlighting midwifery and reproduction in Latin America. The aim of this research is to better understand pregnancy and prenatal beliefs and behaviors within the context of culture change and medical pluralism. Traditional prenatal beliefs and practices around the world are currently experiencing marked changes as a result of the adoption of biomedical practices (Jordan 1993). This chapter discusses biomedical ideology and the process of socialization that leads to new ways of thinking and behaving in a medical context. Authoritative knowledge as a theoretical concept informs a discussion of medical pluralism and the pragmatism involved in decision-making and treatment choice in developing societies.

**Anthropology of Reproduction: A Historical Overview**

Most early works in anthropology were ethnographies in the traditional sense of the genre, providing detailed accounts of entire cultures and societies. Because of the goals of the early ethnographers, reproduction was not the focus of the study, but one of many aspects described and embedded within the ethnography. Notable exceptions are Montagu’s (1949) work on Australian aboriginal thinking of conception and fetal development and Malinowski’s (1932) description of reproductive conceptualization and behaviors of the Trobriand Islanders (Browner and Sargent 1990). Furthermore, these early ethnographers were men and, therefore, denied access to the rituals of birth in “primitive” cultures (McClain 1982). However, the physician George Engelmann (1977) was able to observe childbirth around the world and published an account of his observations in *Labor Among Primitive Peoples* (Davis-Floyd and Sargent 1997). Following World War II, international public health campaigns spurred a surge
in scholarly analyses centered on issues in maternal and child health (Browner 2000). These
efforts resulted in comparative survey work that primarily focused on birth practices as adaptive
strategies, descriptions of birth practices, or the insight that may be contributed to modern
maternity care from traditional practices (Browner and Sargent 1990; Ford 1964; Mead and
and Newton’s cross-cultural survey (1967) brought attention to the fact that very little
ethnography of birth existed at the time.

Scholarly feminist works beginning in the 1960s greatly increased the amount of
anthropological and sociological inquiry into reproduction (Browner 2000; Browner and Sargent
1990). In the last few decades, a shift in focus to reproductive health of minority populations,
primarily in the United States, has further added to the anthropological literature (Masley 2007).
Kitzinger (1978) writes about motherhood as a socioculturally constructed role that is tied not
just to fertility, but the ability to reproduce and the ramifications that has on the female
gender, motherhood, pregnancy and childbirth as social artifact. She proposes a connection
between the male-dominated system and the attitudes toward women as mothers that result in
oppressive obstetric practices in Western society. Brigitte Jordan (1993) provided the first cross-
cultural biosocial analysis of childbirth beliefs and practices, comparing birth in the Yucatan
region of Mexico, the United States, Sweden and Holland. Carol Laderman (1983) documented
birth rituals and practices from the prenatal to postpartum period in Malaysia. Ethnographies of
pregnancy and birth also highlighted factors in decision-making in Jalisco, Mexico (McClain
1975) and among the Baribe in Benin (Sargent 1982).
A large body of work is devoted to the emotional satisfaction derived from motherhood and the cultural value of fecundity and how these concepts are related to female status around the world (Browner and Sargent 1990; Chodorow 1974; Ortner 1974). Feminist writings in anthropology have pointed to the division of labor by sex as a result of child-rearing obligations (Brown 1970) that relegate a woman to the domestic front in a divided social world (Rosaldo 1974). The universal role of motherhood has also been described as a devalued aspect of nature (Ortner 1974). Lewin (1985) argues that becoming a mother is a rational, strategic adaptation to a woman’s biological, social, and cultural constraints. In her study of Latinas in San Francisco (Lewin 1974; Browner and Lewin 1982), she finds reciprocity at the heart of a strategy to establish strong bonds with their children rather than their husbands in order to achieve long-term economic and affiliative rewards. In achieving these goals within a meaningful cultural framework of maternal altruism and self-sacrifice, a satisfying personal identity can be acquired (Lewin 1985).

The type of society in which a woman lives can determine the value of her ability to reproduce, and how power relations from political figureheads to individual family dynamics can influence reproduction (Handwerker 1990). For example, in a community setting where the collective desires more bodies as a necessary survival strategy for community cohesion and defense from neighboring rivals, women are under pressure to reproduce, despite their own reservations about having large families (Browner 1986). In agricultural societies, pressures to produce more children result from a practical need for more hands in the field (Caldwell 1981; Nag et al. 1978). Industrial societies are not immune to pronatalist stances, applying their pressures in more subtle displays of value (Blake 1974), such as assigning an abnormal status to the motherless woman (Martin 1987). Hunter-gatherer and horticulturalist societies do not
ascribe to the cultural construction of motherhood as a symbol of gendered worth and emotional satisfaction, leading some anthropologists to conclude that self-value through motherhood develops with increasing social complexity (Collier and Rosaldo 1981).

McClain (1975) and Sargent (1982) provide some of the earliest looks at obstetric choices in specific cultural contexts. Later works expand this body of research on decision-making, as well as add to theory development (Browner and Press 1997; Jordan 1993; Lazarus 1997; Terry 1994). Much of this work discusses reproductive therapeutic choice in the context of medical pluralism, taking into account the traditional ethno-obstetric and bio-obstetric systems and the factors that are associated with women’s choices of practice. Many studies have attempted to determine barriers to bio-obstetric care in developing countries (Adetunji 1996; Chapman 2003, 2004, 2005; Eggleston 2000; Sargent and Rawlins 1991); while others aim to document traditional or alternative practices in pregnancy management (Browner and Press 1997; Cosminsky 2001; Sargent and Bascope 1997; Sesia 1997).

Current anthropological inquiry into reproduction has expanded to the pressing sociocultural and political issues today, such as immigration and Latina reproductive health in the United States (Masley 2007; Sherraden and Barrera 1996) and the relationship between HIV/AIDS and reproductive health (Carillo 2003a; Gil 2003). Prenatal care, or pregnancy management, has also become a topic of study in recent years (Masley 2007). Although the early ethnographies of the second half of the 20th century discussed prenatal care and pregnancy management (Jordan 1993; Laderman 1983; McClain 1975; Sargent 1982), it was not an issue of concentrated study. Later studies did begin to examine prenatal care attitudes and utilization, however most focused on these issues in the U.S. cultural context (Boone 1985, 1988; Poland 1988, 1989; Winston and Oths 2000).
Traditional Ways of Knowing about Pregnancy and Birth in non-Western Contexts

Around the globe in developing countries, the term *modernization* in medical systems refers to the assimilation of biomedicine by reproductive health care systems as it replaces or mixes with the traditional system (Davis-Floyd and Sargent 1997). Ethnographic studies of pregnancy and birth exploded in the 1980s, with many of them studying traditional systems of birth. In the decade prior, research in the area of reproductive health was slowly growing in volume, and two edited collections of cross-cultural works were published in 1982: *Anthropology of Human Birth* (Kay 1982) and *Ethnography of Fertility and Birth* (MacCormack 1982). Published accounts from all over the world sprang into anthropological view (Davis-Floyd and Sargent 1997), including work in Guatemala (Cosminsky 1977, 1982), Jamaica and Great Britain (Kitzinger 1978, 1982), Benin (Sargent 1982, 1989, 1990), Egypt (Morsy 1982), Sierra Leone (MacCormack 1982), Colombia and Mexico (Browner 1983, 1985, 1986, 1989), India (Jeffrey et al. 1984, 1989) and Greece (Lefkarites 1992; Georges 1997). Other work examined the !Kung of the Kalahari (Konner and Shostak 1987), the Efe (Tronick et al. 1985; Tronick et al. 1987) and the Inuit (O’Neil and Kaufert 1990).

Despite variations around the world in reproductive practices, two near universal aspects are found in traditional reproductive activity systems: the observance of a 40-day resting period following childbirth and the hot–cold theory of disease etiology. Although many cultures promote the 40-day postpartum period as a time to recover and rest, there is considerable individual variation in adherence. It is believed that this phenomenon is pan-cultural because it coincides with the approximate time period that a woman bleeds following childbirth. In Mexico, this time is called the *cuarentena*, meaning 40-day period. While conducting my
research, I found that not all women observe the *cuarentena*. Of those who do, many do not observe it for the full 40 days.

Anthropologists and others have long noted an equilibrium model of disease, usually depicted as a hot–cold dichotomy, in Latin ascriptions of health and disease (Browner 1985; Clark 1970; Logan 1977; Rubel 1966). The hot–cold, or humoral, model of health and illness is based on the expectation that the body should be in a homeostatic state, or a state of equilibrium (Browner 1985; Weller 1983). Illnesses are attributed to a person’s being out of balance and specific illnesses are assigned a hot or cold attribute and treated accordingly. Likewise, anything that is taken into the body has a hot or cold quality and can be used to restore balance. Therefore, food taboos and food proscriptions are common before and after pregnancy. For example, the women who participated in my study cited pork as a cold food that should not be eaten during or after pregnancy. Two sources for the hot–cold theory of disease etiology in Latin America are posited: the first is that it is a simplified version of the Hippocratic humoral etiology brought to Latin America during the Conquest. The second is that indigenous, pre-Conquest, groups already had a well-defined hot–cold etiology of health and illness (Browner 1985). Both Browner (1985) and Weller (1983) argue that anthropology in Latin America placed too much emphasis on the hot–cold aspect of the equilibrium model. Weller (1983) demonstrated that in both an urban and rural setting in Guatemala, knowledge and agreement of the hot and cold qualities of illnesses were inconsistent, but the notions of contagion and severity had higher agreement. Worldwide, there is little agreement on whether the body is in a cold or hot state during pregnancy, although the humoral model of health and illness is prevalent.

Carol Laderman (1983, 1984, 1987) gives detailed accounts of cultural prescriptions and proscriptions in Malaysia for maintaining equilibrium in the body. Not only do the Malaysians
have an extensive list of fish and other items that should or should not be eaten at certain times, but they engage in a ritual of mother-roasting postpartum. Women are supposed to lie on a bed over an open fire for the 40-day puerperium to help keep the body warm and return it to a state of equilibrium (Laderman 1987). In a study in a small village in Oaxaca (Browner 1986), women recounted how the “open” state of the body post-partum allows in aire, or potentially dangerous air, which could have potentially negative health implications. Dr. Benito, a doctor in the isolated village of El Guayabo in the municipality of Pihuamo, Jalisco, told me that mothers will squat over an open fire after birth to heat their womb. Two midwives in San Juan Espanatica explained to me that the womb must be manipulated after birth to close it back because it is open. Oths (2002) found in the Peruvian highlands that this practice is performed to close the pelvic bones that have been stretched open in childbirth. The midwives also have a traditional practice of binding the stomach with a cloth (or Ace bandage) to help keep the womb in place. Browner (1985) discusses the notions of expulsion and retention, another model of equilibrium that is largely ignored in the literature, but that guides remedy selection and other behaviors during pregnancy. She found the humoral system and the idea of getting rid of and retaining substances in the body to be prevalent etiological concepts (Browner 1985). Food prescriptions and proscriptions are more important postpartum than prenatally. Most of the women in my study reported that chicken soup and rice with vegetables (sopa) should be eaten during the puerperium and pork should be avoided.

The traditional Latin American model of care acknowledges the sociocultural reality of the body’s lived experience and assigns etiological value to social, psychological, emotional and physiological processes (Fabrega 1976; Finkler 2001). Social relations and the sociocultural context are integrated into the concepts of health and disease, in addition to biomedical concepts.
This dissertation examines a cultural model of a good pregnancy in Jalisco, Mexico, and aims to capture both traditional and biomedical ways of thinking about pregnancy management.

**Normalcy and Acceptance of Technological Control**

The biomedical model of care ignores the psychological and social aspects of health (Wolinsky 1980). Obstetrics restricts social consideration in health analysis to widespread social practices that impact the biological processes of reproduction, for example, breastfeeding practices and their effect on the duration of lactational amenorrhea. This approach disregards the influence of the sociocultural context through which women experience and conceptualize pregnancy and childbirth. Despite fundamental similarities in the worldwide practice of biomedicine, the history and development of a biomedical system in each nation is uniquely shaped by that nation’s history and culture (Hahn and Gaines 1985). This includes the reproductive health system. A society’s accepted model of reality, or the dominant shared way of viewing the world, is influential not only in individual cognition and behavior, but also in the movements and trends of the larger components of social organization. Changes in the social organization of a society – for example in institutionalized medicine, the structure and function of family, and political and economic divisions – can stimulate changes in childbirth beliefs and practices (Kay 1982).

The dominant belief system of a society must incorporate the elements of cosmology, society and the individual self, and must define these symbiotic elements using the same conceptual tool. In Western and Westernizing societies, science successfully incorporates these elements into a mechanistic and technocratic model (Davis-Floyd 2003). The Cartesian separation of mind and body laid the groundwork for the scientific view of the body as a machine, separate from the thinking mind and also necessitating its extraction from religion and
philosophy and denoting it as an object of science. The body as self is a machine, the prototype is the male body, and the female body is the deviation from the norm (Corea 1985). Expanding the machine metaphor, Martin (1987) identified the factory or production metaphor in which the patient is the mechanic, the doctor the supervisor, and (in the case of reproduction) the uterus is the machine. This framework for interpreting and defining social interaction during pregnancy and childbirth results from the influence of a capitalist social organization where production is a primary motivating factor for behavior (Martin 1987). Additionally, both Western and traditional Latin American social concepts of reproduction have been shaped by centuries of historical social thought, religion, and science. Latin America, and specifically Mexico, has a unique history that gives rise to a national practice of medicine, which is further informed by hegemonic international biomedical thought and practice based on a technocratic model of birth.

Both modern religion and science were influenced by the Aristotelian concept of “women as mutilated males” (Davis-Floyd 2003:50), which was adopted by early religious philosophers and academics. The belief in male superiority was integrated into science through the labeling of the male body as the perfect working machine prototype and the female body as the abnormal malfunctioning deviation (Corea 1985; Davis-Floyd 2003). Furthermore, nature began to be regarded as insufficient and the female body as a reproductive vessel was seen to be more heavily influenced by nature, and thus equally unpredictable. Therefore, female biological processes such as pregnancy and childbirth were also deemed unpredictable and inherently defective and in need of management (Davis-Floyd 2003). Prior to the opening of the first maternity hospital in 1866 in Mexico City, women of all ethnicities and social classes gave birth at home with a midwife (Cházaro and Kersey 2005). However, with the opening of the hospital, obstetricians began to assume the role of overseer of birth. The idea that childbirth is a natural
process governed by nature continued to guide the practice of Mexican biomedical doctors into the late 1800s, although there were many diagnostic devices in use and a myriad of forceps available for intervention (Cházaro and Kersey 2005). In fact, it is within the definition of birth as a natural event that both manual and instrumental interventions accumulated meaning. If intervention was deemed necessary (i.e., if nature was not performing properly), the male obstetrician became the “creator-figure” of the technology and knowledge that surpassed nature (Cházaro and Kersey 2005; Ortner 1974).

Modern religion exhibits this gendered power dyad as well. The rise of organized religion and the concept of a single deity led to the creation of the good–evil duality. This good versus evil philosophy was then transposed into other ideological dualities, including the man–woman duality (Arms 1994). Literal interpretations of Genesis 3:16 influenced men and women alike to accept the notion that childbirth was a great suffering as a punishment for the inherent evil nature that causes women to sin, or in other words, punishment for being a woman (Arms 1994; Wertz and Wertz 1989). Latin American Catholicism is associated with an ideology of sacrifice that, in part, characterizes the female identity and experience. As mothers, women are encouraged to exhibit virginal behavior and endure suffering and martyrdom for the health and well-being of their children (Finkler 1994a; LeVine et al. 1986). Recent critiques argue that Latin American women as individuals make choices and decisions enmeshed in their own personal histories and political-economic contexts and do not necessarily martyr themselves for their children or family (e.g., Gil 2003 and Oliveros et al. 2003). In contrast, Browner (1986) found that women in a small village in Mexico had negative attitudes about childbearing and childrearing and resented the pressure they felt to have larger families. Many of them said they would have preferred to remain childless, or limit the number of children to one or two. These
women were not under religious pressure to conceive, but rather community pressure (Browner 1986).

In the social sciences, it is widely accepted that the health of the social body is influenced in part by its socially constructed gendered identity (Lorber 1997). In many societies, science has replaced the deity as the moral authority and biomedicine has taken the role of social guru. It is the doctor’s unspoken task of promoting and teaching morally appropriate behavior to members of society (Davis-Floyd 2003; Wertz and Wertz 1989). Therefore, the physician now promotes the concept of the inferior female as had once been done by priests. The malfunctioning female body is, thus, perceived to be in a constant state of disrepair.

The medical institution and the government in Mexico saw education and professionalization as a means of enlightening the public and increasing international status in post-independence Mexico. At the same time, obstetrics was medicalizing the female body in a way unique to Mexico. Cházaro and Kersey (2005) provide a detailed feminist critique of the history of bringing childbirth into the hospital. They argue that the historical processes of a post-independence campaign for national identification was encapsulated in European theories of race and served to pathologize indigenous women’s pelves, thereby catapulting the use of forceps during delivery in Mexico. In colonial times, forceps were seen as a symbol of death as they were typically used to extract a fetus from a woman who had died in childbirth. By 1860, doctors and surgeons associated with the National School of Medicine came together to form a “mixed Mexican doctrine of obstetrics.” This movement was fueled by a debate in the field of Mexican obstetrics that European doctrines based on science could be adapted to their own national practice to better address what Guiterrez noted as “Mexican pathologies” (Cházaro and Kersey 2005). Specific to obstetrics, the indigenous pelvis was seen as pathologically narrow, a
discovery primarily promoted by Juan María Rodríguez. Rodríguez spearheaded the campaign to ostracize female practitioners with his writings about their ignorance and incompetence. As head of the Museum of Anatomy at the National School of Medicine, he systematically measured female pelvic specimens and declared indigenous pelves to be inherently and pathologically narrow. Thus, as Mexico struggled to define its citizenry within the confines of popular European discourse on race, Mexican doctors were assigned the task of biologically identifying and defining distinct social groups in their nation. The mestizo pelvis was symbolic of the problems of a nation in the process of nationalizing the mestizo race. Correlated with the effort to discourage European notions of backwards and ignorant Mexicans, obstetricians focused their explanatory and exploratory efforts on the pelvis as a source of racial disparity and variation. Mestizo pelves were not necessarily pathological, only those that were too indigenous, or too narrow, according to the threshold identified by Rodríguez. Forceps no longer represented death to Mexicans, but became artifacts symbolic of safe delivery of mestizos. Therefore, the pelvis further served to help define a national obstetric doctrine unique to Mexico while confirming the biological inferiority of women (Cházaro and Kersey 2005).

Biomedicine perpetuates feminine inferiority by medicalizing not just anatomy, but natural physiological processes such as pregnancy. Indeed, Williams Obstetrics, an obstetric handbook, refers to pregnancy as a “diagnosis” and states that almost one fourth of pregnant women have “significant, identifiable, treatable complications” (Cunningham et al. 2000:222). These complications require heightened medical management of pregnancy and childbirth in addition to the routine technological control of the process. Mexico has not been immune to technological intervention, as evidenced by the use of forceps. Over the past 50 years especially, the cesarean rate in Mexico has steadily increased and in 2006 was at 51.9 percent (INEGI
Latin America has the highest cesarean rate of all regions in the world. In a 1997 study, Mexico ranked eighth of 19 Latin American countries (Belizán et al. 1999). In fact, the 12 countries with a rate of over 15 percent accounted for 81 percent of cesarean births in the Latin American region. Cesarean rates in Latin America are higher in private hospitals than in public ones (Belizán et al. 1999). To give an example, in 2006 the cesarean rate in public hospitals in Mexico was 36.9 percent, while the rate in private hospitals was 66.8 percent (INEGI 2009). Belizán et al. (1999) noted in their study that cesarean rates in Latin America are significantly correlated with the Gross National Product (GNP) of a country.

Biomedicine is a cultural artifact (Hahn and Gaines 1985) shaped by ideological thought in the sociocultural domain. However, biomedicine as a product of culture and society is unique due to the elevated position it holds as behavioral authority. The ready acceptance of, and adherence to, the dominant “technocratic” model by most members of a Western (or Western influenced) society is significant for understanding the proliferation of the model; however, the considerable variation in individual adherence cannot be disregarded (Davis-Floyd 2003). Furthermore, to attribute behavioral innovation and regulation in the dominant model of reality solely to biomedicine would be erroneous. Both the expecting woman (and man) and the obstetric team are comforted by the technological control of birth because it reinforces the greater cultural model of reality that is upheld by all parties involved (Davis-Floyd 2003; Martin 1987).

The rituals of birth work to assimilate an individual’s belief system into that of the social group performing the ritual. Pregnancy and childbirth are viewed as medical pathologies requiring management and supervision. Using the production metaphor as the mechanism for conceptualizing pregnancy and childbirth, a woman is not a machine, but a factory, in part
because her body cannot be turned off with one switch, therefore, the component parts of the factory (e.g., the uterus) must be controlled by the manager (the doctor, or “creator-figure”) to ensure successful production. The pregnant woman in biomedicine becomes inadequate to address her condition as a medical problem and is required to assume a sick role, that is, to take the responsibility of seeking technological guidance and expertise from those who possess the appropriate knowledge (Jordan 1993). Good Maust (2000) has shown that many Mexican doctors are convinced of the dangers of birth and the necessity of technology to control it.

The internationally accepted midwifery model of care (Rothman 1982), in contrast to biomedicine, is a woman-centered approach where the midwife follows the laboring woman’s signals and allows her to experience birth in an individual and unique way. This model of care has become popular with the renaissance of midwifery in the United States and the attempt at standardization by the WHO. However, traditional midwives in Mexico do not always approach birth with this concept in mind (Davis-Floyd 2001). Although Jordan (1993) describes birth in the Yucatan with midwives as woman-centered, her description is based more on the presence of women at the birth than of the midwifery model of care. Davis-Floyd (2001) discusses the (re)professionalization of midwifery in Mexico in which midwives are trained in the current midwifery model of care, altering their own traditional approaches that do not always focus on the woman herself, but the signs and progression of the birth process. LeVine (1993) recounts a conversation with a midwife in a community in Mexico City who describes how she felt sympathetic for women in labor, especially first-time mothers. This midwife noted that she was rather unique in this perspective, that other midwives she knew would threaten the laboring woman, or even slap her for making too much noise.
The entire period involving pregnancy and childbirth in biomedicine is so mechanistically dominated that the label ‘birth machine’ has been used to describe all of the technology developed specifically for controlling the natural occurrence of pregnancy and childbirth (Wagner 1994). By maintaining and promoting a socioculturally-accepted technocratic rationale for the management of birth and by applying ritual procedures that define reproduction as a process of controlled human production, obstetrics successfully navigates the potential quandary that arises when the prescribed notion of human superiority is confronted with a natural process such as birth (Davis-Floyd 2003). Huber and Sandstrom (2001) note that midwifery in Mexico is changing, and will likely continue to change, to include biomedical technologies. These do not necessarily mean high technologies, such as cesarean sections and fetal heart monitors, but low technologies (e.g., pitocin shots, fetoscopes, Doppler monitors, sterile instruments) that are nonetheless imbued with the symbolic power of biomedicine.

Given Mexico’s high cesarean rate, and continued high infant mortality in some of the poorer areas, the government has recently begun to mandate a more holistic and inclusive approach to childbirth. The Ministry of Health established the Department of Traditional Medicine and Intercultural Development in 2002, which is in charge of a national midwifery program to provide culturally appropriate reproductive care to indigenous women (WHO 2008). A constitutional reform in 2001 that made effective the COCOPA Law (Concord and Peace on Indigenous Culture and Rights) signed in 1996 by the Mexican Congress, and a law passed in 2006, are both aimed at upholding traditional knowledge and medicine, including midwifery. Furthermore, some states are passing their own laws as well. For example, Veracruz recently passed a law that gives women the right to live free of “obstetric violence” (WHO 2008).
As discussed, childbirth as a life-crisis event in Latin American and other traditional non-biomedical systems worldwide has traditionally been a woman-centered event, meaning that the event is attended and monitored primarily by women (Jordan 1993). In Mexico, childbirth practices vary widely. In 2007, only 13.2 percent of all registered births specified being attended by a midwife or nurse (INEGI 2009). In the two poorest states of Mexico, Chiapas and Oaxaca, as many as 60 percent of births are attended by a midwife, but in the other 30 states, the average is one percent (WHO 2008).

Pregnancy is not necessarily a time for increased surveillance by specialists, and many women may begin the birthing process without ever having sought prenatal care from a midwife or other person (Browner 1986). The sobada, or prenatal massage, is one form of traditional care that a woman may receive from a midwife or person who specializes in massage, or she may be prescribed teas for certain conditions. Generally, plant medicines in Mexico are utilized during pregnancy to achieve homeostasis in the body, or to expel or retain certain substances. However, knowledge of these remedies is not restricted to the domain of the midwife (Browner 1985). Pregnancy management behaviors are changing and have changed. Currently, women may seek both biomedical and traditional care, depending on perceived need, as well as other larger macro-level factors, such as cost (Huber and Sandstrom 2001; McClain 1975).

When biosocially examining the preparation of an expectant mother within a birthing system, one important aspect of socialization to consider is the mode of information transmission, including the formal and informal (Jordan 1993). Many researchers argue that in bio-obstetrics, formal socialization for pregnant women occurs during prenatal care (Browner and Press 1997; Davis-Floyd 2003; Jordan 1993; Wertz and Wertz 1989). Because pregnancy is considered pathological, or a deviant state from normality, all normal prenatal occurrences can
be medicalized and manipulated for use in training a pregnant woman to seek technological control of her body. The need to teach women to be obedient to physicians and staff and compliant with procedures and technology came with the rise of “assembly-line obstetrics” in the United States in the 1930s (Wertz and Wertz 1989), and in Mexico even earlier in the late 1800s (Penyak 2003). Like an assembly-line in a manufacturing plant, the laboring woman is cared for by a number of different people, each specializing in a different aspect of labor and delivery.

The medical approach in prenatal care aims to eliminate the bad behavior of women and promote compliance with medical recommendations (Wagner 1994). The World Health Organization reviewed hundreds of studies on the use of technology in prenatal care and found that not one focused on the efficacy of the routine care provided, but instead, many focused on the behavior of the woman (Wagner 1994). Biomedicine assumes a socioculturally acknowledged and supported role of setting behavior guidelines (Wertz and Wertz 1989); thus, a woman initially seeks prenatal care to receive monitoring, to receive various tests to check for abnormalities, and to find out the appropriate pregnancy behaviors (Browner and Press 1997). As a result of the hierarchical power dynamics disseminated through bio-obstetric prenatal care, a woman’s self-perception is altered to that of a passive object for the well-being of herself and her baby (Wertz and Wertz 1989).

Informal modes of socialization are found in other domains, such as the public and peer domains (Davis-Floyd 2003; Jordan 1993). Personal narratives serve to socialize the newly pregnant woman into the role of pregnant female and then mother through a shared culture of pregnancy. This shared culture of pregnancy allows women to learn and compare their own embodied and experiential knowledge with that of other women. It is likely that cultural sharing of knowledge has supported the persistence of traditional ways of thinking and behaving during
pregnancy, as well as promoted the adoption of biomedicine in the domain of pregnancy
management and childbirth.

_Achieving Socialization in Pluralistic Societies_

In developing areas of the world where Western practices and belief systems are
becoming integrated into the traditional sociocultural systems, pluralistic health care systems are
emerging, with varying degrees of its acceptance, assimilation, and adherence by the culture and
the individual members. Young (1982) writes that in Western society, a single dominating
system of knowledge reserves the right to assign meaning and social importance to symptoms,
and thus to ascribe sickness. “Symbols of healing are symbols of power,” (Young 1982:271). In
pluralistic medical systems, the same group of symptoms can denote different sicknesses. The
particular sickness is determined by social forces such as access to certain practitioners, and the
special areas of focus dealt with by specific practitioners (Young 1982).

“What we bring to childbirth is nothing less than our entire socialization as women”
(Rich 1977:160). From a biomedical perspective, the socialization is to expect pain, to fear the
process, and to be the passive, compliant patient (Rich 1977). Institutional control of childbirth
molds the conceptualization of the biological and social woman and her self-perceptions
(Romalis 1981). Pregnancy is a state of liminality for a woman, a period when she is in
transformation from one social identity and role to another (Breen 1989; Davis-Floyd 2003).
Jordan’s (1997) concept of authoritative knowledge assumes that in a setting where more than
one way of knowing in a domain exists, such as pregnancy and childbirth, one way of knowing
will gain authority as other ways of knowing are devalued. This does not mean, however, that
the devalued way is lost. In many areas of the world, traditional medical systems have been
devalued as biomedicine has gained authority, but they continue in practice.
Behavior in a transitioning state is vulnerable to influence from any perceived authority (Davis-Floyd 2003), as is self-perception. In the motherhood transition in a purely Western society like the United States, that authority is the obstetrician. In Latin America, the obstetrician is now an authority, but the authority of the midwife has not been eliminated (Sargent and Bascope 1997; Sesia 1997). Prior to the introduction of bio-obstetrics, women were in control of the entire birth process, and many delivered their babies without the aid of even a midwife, though someone such as a relative or husband was usually present (Browner 1985; Jordan 1993). With this history of midwifery and the more recent introduction of biomedicine, there may be two systems of authority which a woman feels compelled to consult: bio-obstetrics and ethno-obstetrics (McClain 1975). Davis-Floyd (2003) writes that in Latin America there is now widespread acceptance of the technocratic model of birth, a belief system born from technological control of birth. The cultural world view that filters thoughts and behaviors compels an expecting woman in Mexico to desire technological control, but also to comply with all possible measures for which she is responsible. A woman in Mexico has a moral obligation to do all things within her power to ensure the health of her unborn child, a gift from God for some, a continuation of her partner’s legacy for others (Torres and Cernada 2003), or a safeguard for the collective of the community (Browner 1986).

The edited volume *Childbirth and Authoritative Knowledge* (Davis-Floyd and Sargent 1997) contains accounts of shifting paradigms and transitioning authority as birthing systems around the world adopt more technology and biomedical ideals into their rituals and praxis. Sesia (1997) demonstrates that in Oaxaca, ethno-obstetrics remains a critical part of pregnancy management, despite biomedical training of the midwives. Women want to have the sobada prenatally, and they seek midwifery care specifically for this reason. In the face of biomedical
attempts to alter their practice, the authority of the midwife, especially for the sobada, has not waned and community desires to continue the practice maintain this authority.

Modernization can be defined as the movement of thoughts, ideas, practices, and social institutions in a society towards Western ideals and practices (Napolitano 2002). Westernization, or modernization, is not a linear process taking place on a gradual scale of acceptance. In the developing world, modernization tends to occur in urban areas first and at a rapid place, and slowly infiltrate the rural, less developed areas. In the United States, the transformation of birth practices began with the upper-classes seeking the specialized, modern care of bio-obstetrics. Midwifery was relegated to care for the poor and uneducated, and the rural folk and, thus, became symbolic of ignorance and backwardness (Wertz and Wertz 1989). In rural areas, especially in the South, midwifery continued as common practice until the 1970s when Medicaid programs reduced or eliminated the cost of having a baby with a biomedical doctor and direct entry midwifery was ultimately outlawed (Smith and Holmes 1996). A similar process has taken place in Mexico. Since the 1970s, the government has expanded the biomedical health care program and made efforts to increase access to it for the rural areas. Mexican biomedicine had already begun a national practice of obstetrics as early as the late 1800s (Cházaro and Kersey 2005), however, reaching the rural areas of Mexico took a century. Migration has played no small part in the process of Westernization, as Mexicans go north and return, bringing with them cultural beliefs and practices from the United States. As such, Mexico has a culture shaped by its own history of strong indigenous cultures, Spanish conquest and Latin ideologies, as well as the newer Western influence experienced by the rest of the developing world, but augmented by heavy migratory traffic to and from the United States.
Despite over a century of biomedical practice in Mexico, complete with large teaching hospitals with state-of-the art technology, the medical system of Mexico remains pluralistic. The traditional medical system, an artifact of pre-Conquest indigenous cultures, retains a large, viable presence in health-care decision-making and choices (DeWalt 1977; Finkler 2001; Young 1981). McClain (1975) was one of the first anthropologists to present an insightful look into a pluralistic birthing system with her account of ethno-obstetrics in Ajijic, Mexico. She noted that both systems existed simultaneously and were not utilized exclusively. In other words, women did not adhere to one system or another, but many used both types of care in their pregnancy management techniques (McClain 1975).

Biomedicine medicalizes the female body, however, there has not been a complete transformation of the social institution of medicine, nor has there been a complete change in conceptualization of the female body. In Latin America, pregnancy and childbirth remained largely under the domain of women until recent decades (Jordan 1993). As stated before, Catholicism as a monotheistic, good-versus-evil religion does relegate the female body to one of dysfunction, however, children are seen as a gift from God. Around the globe, a woman is esteemed for her role in both bringing the child into the world, and raising it (Browner and Sargent 1990; Paulme 1960; Vieille 1976). It is her duty to be a mother although, as Browner (1986) found, it is not always a welcome duty. I would argue that this is one of several reasons why the biosocial process of pregnancy and childbirth has largely remained in the hands of women until the last two decades in Mexico. The concept of Marianismo (Stevens 1972), although debatably a stereotype (Navarro 2002), refers to the idea that women are Mary-like, inherently spiritual, closer to God. Perhaps birth persisted as a women-centered event, in part, because of the spiritual nature of delivering gifts from God. In the most underdeveloped areas of
Mexico, most women continue to deliver their babies with midwives partly because the midwives are sanctioned and trained by the government to practice in the stead of biomedical obstetricians (Sargent and Bascope 1997; Sesia 1997).

The social process of culture change is ongoing and dynamic. Within Latin American populations where development and modernization is taking place, “old” and “new” behaviors are strategically synergized in a “third way that gives continuation of their history in the culture of origin by embracing cognitive symbols and language that affirm collective identity while meeting the current conditions of the immediate environments by negotiating other social standards,” (Torres and Cernada 2003:4). At issue in this process of culture change is the notion of social power and the ability of individual agency to break through the structures of established institutions. Biomedical providers are working to discover innovative ways to influence community members to accept new ideas and practices (Torres and Cernada 2003). The socialization of birth in Latin American societies begins at the microlevel with the family, including the male partner, but also extends to the macrolevel through the social institutions of education, economy, religion, politics and other social structures (Browner 1986; Terry 1994; Torres and Cernada 2003). The practices and beliefs of pregnant women are further reinforced and influenced by lay providers and promoters of reproductive health (Torres and Cernada 2003). At the macrolevel, government policies in health care reform, such as prenatal care advocacy and expansion may not reflect women’s desires for reproduction and, therefore, may not be fully accepted by the target population (Browner 1986). In the developing world, biomedical government policies ensure a paradigmatic shift to include biomedical elements in an overall model of pregnancy and birth. In Mexico, bio-obstetric technological control of birth has become the most common form of delivery (Davis-Floyd 2003).
The power of the system of socialization within the biomedical domain demands conformity to the birth rituals from those involved. As a culturally constructed medical system, it parallels the social ideology of popular culture and is widely accepted, thereby making everyone a participant in the proliferation of its ideas and concepts (Martin 1987). It is likely that a woman will seek out all possible forms of assurance that the unborn child is developing normally. Members of a culture do not embrace one paradigm or another without considerable individual variation. In a setting like Mexico where there is an old and a new practice of pregnancy management, with two possible authorities on birth, a woman has options from which to choose depending on the degree to which she or her family members adhere to one or more paradigms. In other words, her pregnancy experience will depend on the socialization of her and her family members into one system or another. Women are pragmatic in their decision-making in other cultural settings with pluralistic reproductive systems (Georges 1997; Obermeyer 2000; Oliveras et al. 2003). Thus, in Mexico, women are likely engaging in decision-making from within their individualized sociocultural and politico-economic contexts.

In pluralistic medical systems where biomedical traditions are accepted along with the traditional system, socialization may take place on a number of varying levels. At the informal level, both traditional and biomedical ideas and behaviors are encouraged by various members of the community, including partners, family members, neighbors, as well as lay promoters of both traditions. At the formal level, through macro-level institutions, biomedical practices are promoted through government campaigns to increase bio-obstetric prenatal care, such as the public social security program with compulsory prenatal visits to a health care facility that result in near full coverage for all pregnancy-related costs. The government has also promoted midwifery, but a practice of midwifery that has been reshaped into a biomedical context through
training programs. Societies with a contemporary biomedical influence in both macrolevel institutions as well as microlevel transfers of knowledge may witness a melding of customs and behaviors that are based both in traditional and biomedical culture. More recently, legislation in Mexico has begun to promote and legitimize traditional practices and knowledge, including the practice and use of midwifery (WHO 2008).

Mexico as a developing country has witnessed, and continues to witness, shifting paradigms of health and disease that do not fall onto a linear progression of change. Biomedicine does not become integrated into a society in a uniform fashion. Finkler (2001) has noted that the cultural artifact of medicine is shaped through the sociocultural lens, thus producing a unique cultural product. In the domain of pregnancy and childbirth, the ethno-obstetric beliefs of Mexican culture and the bio-obstetric technocratic beliefs of Western biomedicine have been integrated into a current model of prenatal beliefs and behaviors that draws from both paradigms (McClain 1975; Sesia 1997). Despite continuing to play a role in prenatal care for Mexican women, midwives only attended 13.2 percent of births in 2006 (INEGI 2009). As Mexico has become more Westernized, the traditional etiologies of “hot” and “cold,” the risk of forceful emotions and experiences, and the embodiment of the everyday lived social existence now share in the pathology of disease with biomedical elements identified through science and technology.

Conclusion

Reproductive health has been the focus of numerous anthropological inquiries, especially in association with international health campaigns following World War II. The biological processes of reproduction are influenced by the social, cultural, political, economic and ecological aspects of the individual environment. Pregnancy and childbirth as a social process
and event does not occur in a vacuum. The process is an institution shaped by the greater sociocultural context within which it occurs. Prenatal beliefs and behaviors are filtered and interpreted through a cultural lens by the individual experiencing pregnancy and childbirth. The experience and result of the prenatal process and birth is further determined by the power differentials in a woman’s micro-level relationships and the greater macro-level structural relationships that define her everyday existence. With an understanding of the entire context within which the individual is located, anthropologists and others can better understand the decision-making process in matters of pregnancy and childbirth management. This research was designed with the goal of accounting for the contextual factors that help to define the prenatal experience and influence both beliefs and behaviors. Cultural domain analysis is used to identify a shared cultural model of a good pregnancy while cultural consonance analysis examines individual behavior in the context of the political-economic and sociocultural environment.
CHAPTER FIVE: ANTHROPOLOGY OF MEXICO: THEORY AND FINDINGS

Introduction

The anthropology of Mexico has contributed to general anthropological theory on political-economy and culture change, as well as theory in cognitive anthropology, medical anthropology, and studies of reproductive health. To understand the theoretical underpinnings of an analysis that examines different types of municipalities, this chapter will address urban and economic anthropology in Mexico, as well as the anthropologies of globalization and modernization. The concept of globalization has received increased attention in the last few decades as the culture of the world has begun to shift from local to global. Various definitions of globalization exist in the literature, but generally scholars agree that the process involves the flow of “capital, people, images, commodities, and ideas” (Rothstein 2007:3) from Western origins into the developing world.

Inherent in this shift is the concept of culture change. Anthropology has duly attended to increasing the understanding of the mechanisms involved in culture change, noting that culture change does not happen in a linear, nor uniform, fashion, resulting in variation (Jordan 1993). Medical pluralism provides a platform from which to examine intracultural variation in beliefs and behaviors. Mexico has a prenatal health care system situated within a pluralistic medical setting, therefore, literature focusing on biomedical and traditional health care and reproduction in Mexico are discussed (Baer et al. 1999, 2004; DeWalt 1977; Finkler 2001; Jordan 1993; McClain 1975; Sargent and Bascope 1997; Sesia 1997; Weller et al. 1993, 1999; Young 1994).
Gender and identity in Latin America, including Mexico, have been addressed by the social sciences for several decades. Studies have discussed the concepts of *machismo*, *Marianismo*, suffering, and sacrifice, as well as social change in the context of urbanization and rurality, poverty and migration (Browner and Lewin 1982; Finkler 1994a; Higgins 1983; Lomnitz 1977; Napolitano 2002; Navarro 2002; Stevens 1973). Recognition of the social forces compelling women to participate in a culturally-appropriate way within the structures of production and reproduction, especially at the household level, are vital to comprehending women’s daily work, both in the house and out of the house. Education, occupation, and socioeconomic status, as well as household makeup, division of labor, and even social support are linked to the macro and micro-sociopolitical understandings and relationships in Latin American cultures, and are also sources of variation within a culture.

Cognitive theory has been incorporated into research in medical anthropology in Mexico for several decades, helping to shape current thinking and practice. Studies from medical anthropology with a cognitive orientation are discussed to provide an understanding of the cognitive methods, for example, cultural domain analysis and cultural consonance analysis, which are used to elicit and analyze cultural models of pregnancy in the different regional sites and among the diverse participants with regard to sociodemographic and other characteristics. Within this discussion of cultural models, intracultural variation is also addressed, especially with regards to comparative research that highlights variation in definitions of health, disease, and illness, as well as, variation in decision-making and treatment choice.

In reflecting upon four decades of work in Mexico, Kearney (2004) argues that anthropology needs to return to a holistic approach to address both the scientific and humanistic aspects of a community or study population (i.e., reconcile the material with the symbolic). The
progression of anthropological inquiry is divided into five phases: formative, classic, modern, transnational, and global. Kearney (2004) is not only referring to the major paradigms guiding his own research over time, but also that of other researchers both within and outside of the Mexican cultural context. As anthropology in Mexico is discussed in this chapter, it should be remembered that later studies build on earlier studies, not only in their findings, but in their theoretical and methodological foundations.

**Urban Anthropology in Mexico: Studying the Peasant**

Early economic and urban anthropology in Mexico added to the theory about peasantry, as well as ideas of structural influence on culture and social interaction. Peasantry came into the focus of scholarly work as a phenomenon that arose from modernization and urbanization, or development as it is referred to occasionally. Napolitano (2002) notes two major debates growing from this early work: the urban and rural paradigm, or urban-rural continuum (Redfield 1947) and an approach based on “Culture and Personality” (Lewis 1951, 1961, 1966). The Redfield-Lewis debate (c. 1950s) stimulated questions about ethnographic approaches, and resulted in a shift in anthropological inquiry to the formation and implementation of cognitive methodology (Colby 1996; D’Andrade 1995). Redfield (1947), Lewis (1951, 1959, 1966), Wolf (1957, 1966) and Foster (1965, 1967) published groundbreaking works with foundational innovations for studies of peasantry, culture change, rural to urban continuums, and traditional/indigenous integration into market economies, among other topics.

Much of the early ethnographic research completed in Mexico centered on the investigation and discussion of “folk” tradition and lifestyle, developing later into the study of peasantry, or the study of poor populations with a lifestyle based in agriculture and dependent on larger urban centers. Redfield (1930, 1956) was one of the first to not only report on peasantry,
but also to put forth theories about peasantry as a type of society (Foster 1967), using Mexico as his study culture. The folk-urban continuum was a theoretical concept lauded by Redfield as a means to situate types of societies for comparative study (Redfield 1956). Useful for studying social change as well, another goal was to understand and account for the transformations a rural community experiences as it grows larger and more complex. Redfield and others studied several communities in Mexico that appeared to provide evidence for the continuum construct. Peasant communities were described as the “little community” by Redfield and were examples of a folk classification (Foster 1967). The “little community” operated in harmony supported by ritual. In his book *Peasant Society and Culture* (1956), Redfield clarifies the definition of a peasant community as an “isolated, self-contained community [that] remains the abstract image around which social anthropology has formed itself” (1956:12).

Lewis (1951) disagreed with the folk-urban continuum claiming that the idea: 1) creates a false division of city and rural areas and gives the illusion of an isolated village; 2) does not account for internal dynamics and diversity in and between villages; and 3) overlooks the influence of historical change in greater society, thereby ignoring real historical change for the convenience of locating vaguely similar places on a theoretical construct. Foster (1967) agrees that although Redfield pioneered peasant studies, even authoring a nomenclature change in the literature from “folk” to “peasant,” he never could remove his work from his early conceptualization of “folk” and “folk-urban continuum.” Redfield (1956) argues that the purpose of a theoretical construct is to supply an abstract concept as a point of reference for study of reality, and thus, his assertions were mistakenly taken to be concrete models and not conceptual prototypes. Redfield (1956) does acknowledge and discuss the broader political economic environment and takes an approach similar to current political economic research. He
surmises that to understand a community one needs to look no further than the community itself. By this, he means that the community itself contains the information needed for a complete understanding of how it relates to the greater society (Redfield 1956). Later studies build on this idea of unique histories following a contemporary environmental or ecological approach (e.g., Bennett 1995; Lomnitz 1977; Napolitano 2002). Although the rural to urban continuum is no longer in fashion for studies of urbanization, the concept was at the forefront in recognizing that culture and society are dynamic, and different regions in the same sociocultural context shift from rural to urban at different rates and in different ways. Current thinking recognizes the differences between rural and urban communities, but does not view the “progression” as linear, nor as a dichotomy. This dissertation aimed to capture intracultural variability. As one effort to achieve this goal, participants were recruited from an urban area (the Metropolitan Zone of Guadalajara), a semi-urban medium-sized city (Ciudad Guzmán), several cabeceras (the municipal seat for a municipio, equivalent to a county: Zapotitlán de Vadillo, Zapotiltic, Tuxpan, and Tecalitlán) and several ranchitos (ranging from villages to small towns: Poncítlan, San Isidro, Ejido Jose María Morelos, Copala, Jiquilpan, La Yerbabuena, El Guayabo, Los Colomos, Los Laureles and San Juan Espanatíca). For the purposes of this research, urbanization is conceptualized as a form of modernization in areas with high population density where there is general adoption Western science and technology, and beliefs, behaviors, and practices. Access to modern facilities, such as hospitals, shopping malls, and internet cafes can also be seen as signs of modernization.

Lewis took a less romanticized approach than Redfield to the development of peasantry theory and wrote about conflict instead of harmony (Hawkins 1983). His analysis of the same village visited by Redfield 17 years earlier, Tepoztlán, attempted to place the village in the larger
político-economic context (Lewis 1951), an analytical trend that continues today. Lewis (1951) claimed that Redfield interpreted villages as isolated and missed what Lewis saw to be the impact of the Mexican Revolution on the economy of Tepoztlán. Current anthropological thinking, such as a biocultural theory, brings these two approaches together, taking into account the political-economic and the environmental and ecological perspectives. Foster (1967) writes that most of the peasant analyses from around the globe emphasize a structural relationship between the village and the city, as well as similar social, economic, political, and sometimes religious and temporal characteristics. He credits Redfield with first pointing out that a peasant community requires a city to bring about its existence (Foster 1967; Redfield 1953). Extrapolating this concept to today’s global economy, it could be argued that peasantry is not just created by urbanization, but also through globalization and migration. In discussing globalization in the small town of San Cosme in rural Tlaxcala, Rothstein (2007) examines changes in peasantry over three decades. Campesinos (small-hold agriculturalists) were primarily self-sustaining in the past. With the opening of factories and the proletarianization of San Cosme, many people turned to the formal sector and wage work. Those campesinos who remained in agriculture increasingly became dependent on supplemental income due to a shift in government policies that favored industrialization and commercial agriculture to small-scale cultivation. Today, most people in the area who identify as campesinos grow very little for subsistence, but rely on supplemental income (Rothstein 2007).

Migration to the United States creates sending communities that become somewhat integrated into, but not necessarily dependent upon, a transnational economy. Two dominant ideas about migration are relevant to this discussion of peasantry: dependency and development (Cohen 2004). Dependency models propose that local socioeconomic inequalities and
unproductive consumption are increased by migrating households (Reichert 1981). Development models highlight the benefit of remittances to encourage economic growth (Taylor 1999). Cohen (2004) meticulously examines the effect of remittances (both domestic and from the United States) in the central valleys of Oaxaca. Here, remittances comprise a small portion of weekly income, but those households receiving remittances tend to have higher weekly expenses. The money received is put to use for daily existence more than any other reason. Cohen (2004) finds that most households receive remittances, but that it does not appear to foster capitalist investment in terms of entrepreneurial endeavors or expansion of existing businesses. Migration may have altered the state of peasantry to not being just dependent on a large city, but now dependent on a neighboring country as well.

Foster (1953) describes the political situation of the peasant as being a “half-society,” in other words, a society situated in a larger social entity with two-way structural relationships: side-by-side and up-and-down both with “tribal” societies and towns and cities. Drawing on Marxian concepts of infrastructure, superstructure, and capitalism as a global system, Kearney (2004) discusses vertical integration and horizontal integration as theoretical concepts describing the manner in which the human species relates to the immediate and the general. Vertical integration is described as the way the “material aspects of a community’s infrastructure – it’s environment, ecology, technology, and division of labor; and the sociocultural conditions and elements of living communities – are integrated among themselves and are seamlessly integrated with a community’s more nonmaterial, symbolic, ideational, and emotional superstructure – for example, it’s language, myth, art, literature, cognition, and ideology,” (Kearney 2004:4). Horizontal integration refers to “how local communities are connected to the rest of the world and…how the greater human community on planet Earth functions globally,” (Kearney 2004:8).
Wolf is another anthropologist who made landmark contributions to the study of peasantry, drawing insight from Mexico. According to Foster (1967) and Redfield (1956), Wolf’s definition of a peasant had an occupational characteristic based on the structure of production, implying that the peasant identity is related to work. Wolf (1966) declares the means of production to be a defining characteristic of peasant society. However, a close reading of this discussion reveals that the means of production are directly linked to the existence of a dominant group and a subordinate group, with the dominant group holding the power over the cultivator (Wolf 1966), therefore Wolf is not discarding the structural context, but adding occupation to the definition. The use of the word cultivator illustrates Wolf’s (1966) focus on agriculture as the means of production of a peasant society. Foster (1967) critiques the inclusion of occupation and says a definition of peasant society must be structural and relational, although Redfield (1956) concurs that the role of agriculturalist should be in the definition. Perhaps with the global economy and the opening of the markets with neo-liberal policies, agriculture is not the only defining occupation of a peasant. Later studies link peasantry to industry (e.g., Lomnitz 1977), and note how peasants do not have to be agriculturalists, but can also be dependent upon an industrial economy. Tonalá, a municipality in the Metropolitan Zone of Guadalajara, is an example of an urban city with peasant communities, if there could be such a definition. The neighborhood, Jauja, where over a dozen of my interviews were conducted, is certainly poor, communal, and dependent on the arts and crafts industry of Tonalá. Most of the men in Tonalá work not in the fields, but in the factories producing items such as chimeneas, ironworks, and woodworks that are sold in the warehouses and markets that are the basis of Tonalá’s economy.

The concepts of peasantry discussed above are relevant to a current study in a developing country, such as Mexico. In this age of transnational movements and globalization, the
definition of peasant could be expanded to include all poor, regardless of attachment to a major nearby city. In Mexico, peasants are created by urbanization, but also by disproportionate allocation of government resources and infrastructure, as well as globalization. One has only to look at a rural community to see the absence of schools beyond the sixth grade, the absence of a permanently staffed health clinic, and the absence of job opportunities, despite massive efforts in the past three decades to expand education and health care (LeVine 1993). The market economy and related policy appears to have left the rural inhabitants of Mexico with sagging infrastructure as urban areas, such as Guadalajara, continuously require more financial input to support growing industry and an expanding world market. However, the permeation of global technology is apparent even in the most remote areas, where community members may own cell phones, televisions, hand-held video games, and other modern technologies. This consumption of goods at a rate incongruent with financial means is a symptom of a capitalist economy, which encourages accumulation of wealth and goods (Marx 1906).

As development research continued in Mesoamerica, new concepts and theories were proposed and are still regarded as pivotal in the study of culture. Foster (1965) was a proponent of determining a model or integrating principle of a world view, or ethos, of a particular culture. The image of limited good is a model of cognitive orientation that Foster (1965) felt best accounted for peasant behavior. It accounts for patterns that indicate that peasants view their “total environment” as a life in which all that is desired exists “in finite quantity and [is] always in short supply…..there is no way directly within peasant power to increase available quantities” (original italics omitted) (Foster 1965:304). Not only did this conceptual model add to the literature on social and economic theory, but it was an attempt to arrive at a cognitive model. An obvious critique is that this model is an etic overlay formulated by the researcher based on
observation, and not a subjective model gained through precise methodology.

Foster’s total body of work is an example of a functionalist approach to studying urbanization that assumes that modernization is a linear, forward moving change in lifestyle (Napolitano 2002). Inherent in this concept of modernization is the assumption that the meaning of personhood is universal and ahistorical (Napolitano 2002). In other words, it implies the absence of variability. Others have noted that not all cultures accommodate Western ideals in the same manner, nor does each community within these unique sociocultural contexts change according to an identifiable closed process (Finkler 2001; Napolitano 2002). In other words, there is intracultural variation in degrees of Westernization.

A “closed corporate peasant community” is one type of peasant way of living identified by Wolf (1957). They are corporate organizations that maintain a “perpetuity of rights and membership,” and closed because only insiders can enjoy community privileges, and are discouraged from participating in social relations in the larger society (Wolf 1957). Furthermore, exchange of goods and ideas outside the village is limited and there is communal jurisdiction over land and mechanisms for redistribution of wealth. Wolf (1957) differentiates between a closed corporate peasant community and “open” peasant communities that lack communal land and have no redistribution of wealth. Succinctly placing his discussion in a political economic perspective, Wolf (1957) illustrates how the rise of the peasant community can be traced to social and economic policies initiated as far back as the immediate post-Conquest era. Wolf’s (1957) historical perspective aligns with Lewis’ political-economic approach.

Research coming out of Mesoamerica has greatly impacted thinking in general anthropology (Hawkins 1983). Hawkins (1983) cites Redfield, Lewis, Foster, and Wolf as
creating a solid theoretical and methodological foundation in culture studies, even suggesting that the community study approach was essentially pioneered and mastered in Mesoamerica. According to Hawkins (1983), Redfield brought attention to regional relationships and peasant subordination to the city. Lewis highlighted conflict and family interaction in peasant communities and Foster theorized on the image of the limited good. Finally, Wolf discussed the nature of the peasant society and formulated the theory of the closed corporate community (Hawkins 1983). These early theorists provided the basis for subsequent studies of communities that approach the community as a unique entity shaped by local and global historical processes, but that share certain characteristics of change.

**Beyond Peasantry to an Anthropology of Urbanization and Globalization**

The discussion of these early theorists lays a foundation for later works beginning in the 1970s and beyond that account for historical processes in urbanization and recognize that processes of social modernization do not equal cultural modernity (Napolitano 2002). As the larger urban centers, such as Guadalajara, began growing and expanding, creating suburbs and outlying impoverished neighborhoods and communities, anthropologists and others carried out studies on the social processes and adaptive strategies associated with poverty and marginalization in urban environments, migration and transnationalism, and globalization (Cohen 2004; Gonzalez de la Rocha 1994; Higgins 1983; Kearney 2004; LeVine 1993; Lomnitz 1977; Rothstein 2007), as well as gender and identity (Finkler 1994a; Napolitano 2002).

An ethnography of a shantytown in Mexico City focuses on the structures of production and reproduction in everyday lives of the impoverished (Lomnitz 1977). Lomnitz (1977) shows how social ties sustain the economy of the community through the mechanisms of reciprocal exchange, ritual kinship, and kinship and family. Placing the shantytown in the environment of
the capital market, she describes how the urban poor both provide the labor and consume the goods in the capitalist market. Furthermore, they are placed in a dependent relationship with the urban middle-class, who are dependent, in turn, on the government and market. Her findings illuminate the structural importance of informal forms of social support in an impoverished urban area, and appear to extend the theory of dependence first laid out by Redfield (1953) and Foster (1965) that the community is dependent on the city and has an image of limited good, as well as Wolf’s (1957) idea of a closed corporate community. The shantytown in Lomnitz’s (1977) study is characteristic of many of the smaller communities dependent upon the large urban centers such as Mexico City and Guadalajara, having grown originally either from rural migrants or from small communities that were enveloped by the expanding metropolis.

Logan (1981) highlights mechanisms for economic sustainability in the community in another study of a low-income neighborhood in Guadalajara, formed in the 1960s by a real estate company that bought small farms and landholdings on the periphery of the city then subdivided it into lots for homebuilding. Like Lomnitz (1977), Logan (1981) finds that informal exchange networks are crucial elements of everyday livelihood. Further, she notes the important contribution of women to household income through conserving, recycling, and entrepreneurial endeavors. Economic studies generally focus on the head-of-household as the breadwinner and omit the contributions of housewives and the strategies they have adopted to supplement the household with goods and services (Logan 1981). Of the 88 participants in my study, 19 (22%) reported selling something from their home. Eight of these 19 women were also employed. Of the 30 percent (n=26) of women who were employed, nine of them work at a family business usually attached to the home. Logan’s (1981) study reveals an additional mechanism for covering expenses and averting poverty.
Napolitano (2002) provides a look at a low-income, working-class neighborhood outside of Guadalajara that is not characterized by peasantry or as a shantytown, but as a neighborhood that has historically been shaped by the urbanization of Guadalajara. Napolitano (2002) shows how the urbanization of Guadalajara differs from that of Mexico City (Lomnitz 1977) and Monterrey (Bennett 1995) and other major urban areas in Latin America because it has not been characterized by land invasion, but rather by later forms of land regularization. The circumstances surrounding the urban expansion of Guadalajara have stimulated a reshaping of the identity of the people who live there through action by the community and religious organizations. One of the guiding principles of Napolitano’s work is the idea that embodied experience must be analyzed simultaneously with cognitive models (Csordas 1994). Napolitano (2002:201) argues that the “urban space is created by lived experience and performed styles.” This argument is based on the concept of connaissance (Stewart 1995), a localized form of knowing correlated with a specific social space where physiology and sociality are brought together.

An understanding of an embodied social space informed by both physiological and sociocultural underpinnings can be viewed as answering, in part, the call in biocultural theory to develop a holistic approach in medical anthropology. Napolitano (2002) examines how modernity plays out in the religious, medical, and gendered landscape. She shows how in each of these domains, the beliefs and behaviors are informed by larger sociocultural structures that reflect changing ideas associated with modernity. For example, a large movement of alternative medicine has accompanied increased dissatisfaction with biomedicine. In the alternative medical system, the causes of illness are attributed to social reality. In other words, they are the embodiment of conditions in the social environment. While these ideas are typical of Latin
American etiology, Napolitano (2002) demonstrates that the modern social reality of capitalist inter-class conflict manifests in social disparities. Furthermore, the capitalist emphasis on individual responsibility trickles into models of illness and health.

The effects of urbanization and globalization in Mexico, and other areas of the world, are not limited to the urban areas. Globalization has become the common terminology for studies of development in the last decade. For the purposes of this study, it does not simply refer to the development of industry, infrastructure, et cetera, but also to a global economy in terms of a neoliberal approach to a market economy and an increased sharing of ideas, technology, and more across national boundaries. Rothstein (2007) gives an account of three decades of change in San Cosme Mazatecochco, in the state of Tlaxcala. In this particular village, a change in the primary source of income from family agriculture to factory wage work occurred in the decades after World War II. Again, to highlight a point previously made, what could be considered peasants today are not necessarily tied to an agricultural economy. Marx (1906) would have called these people the proletariat. Rothstein (2007) argues that recent modernization in the 1990s was less profound in influence on the culture of the village than the changes that took place in the 1960s and 1970s, mostly under the heuristic denomination of development. Those early changes included infrastructural change such as paved roads, electricity, potable water and sewage systems, as well as a desire for increased access to education. Furthermore, Rothstein (2007), like Lomnitz (1977) and the early anthropologists, notes that a shift toward a proletariat economic structure also fueled changes associated with modernity, in many ways besides just consumption. Proclaiming a similar argument as other scholars presented in this chapter, Rothstein (2007) rightly points out that globalization and development are not linear processes, and further emphasizes that they cannot be measured strictly quantitatively, but that the
qualitative aspects of change associated with a global world must be discussed as well.

Perhaps even more salient to the understanding of the impact and reach of globalization is the acknowledgement that rural areas are not immune to the advantages and disadvantages of the increasing global network. Each community is impacted differently, and each community member adjusts to culture change differently (Rothstein 2007). The diversity in adjustment is noted as sometimes incorporating new practices to augment existing practices, sometimes old practices must be discarded and new adaptive ones invoked, and sometimes change from globalization is not recognized, or ignored. Rothstein (2007) gives a good example of this when she recounts that the people in San Cosme were not familiar with (i.e., had not been to) the Wal-Mart that had been open for a while in Puebla, the nearest major city. The findings of Rothstein (2007) highlight, once again, the fact of intracultural diversity in acceptance and adherence to norms related to culture change and discount notions of cultural uniformity in any domain of a given culture, including development and globalization.

A discussion of the history of the development of economic and urban anthropology in Mexico provides theoretical and contextual background for an examination of intracultural variation in relation to urbanity/rurality, globalization and modernization. As noted before, this study will not assume an urban-rural continuum, nor an urban-rural dichotomy, but does understand that implied in the identifying terminology are shared characteristics that are generally common to areas with the same classification. In an urban area, there are marginalized and peripheral communities that are not always formed from the same processes, but because of their dependence on the political-economy of the urban center are similar to one another. Furthermore, all villages in the rural area are not clone images molded from the same process; they are not all closed corporate communities, or open communities, although they may share
general characteristics. However, they do succumb to the same structural processes that seem to forget their existence in an effort to direct all economic and political support to urban centers. These rural areas also have ties to Mexican urban areas, as well as the United States, thus they are tied into the global context in a manner quite different from a metropolitan zone. This study strives for vigilance in careful classification of the communities included in the project, and intends to approach an analysis of each community within the larger sociocultural context of Mexico, as well as the unique niche created by the historical processes that define the community.

To give a final example, the area located south of Ciudad Guzmán in which Tecalitlán (a municipal capital) and El Guayabo (a small village) are located, has experienced a very unique economic shift from economies based on industry and tourism to an economy resembling peasantry in the last two decades. The highway connecting Guadalajara to Ciudad Guzmán to Colima, and on to the coastal tourist destinations, ran through Tecalitlán and Pihuamo (another municipal capital). The economies of both towns grew around the highway and there were many eateries and places to spend the night along the way. In the late 1980s, the government outsourced the building of a new highway that made a more direct route between Ciudad Guzmán and Colima. Since the rerouting of the highway, combined with a number of other factors, these two towns have essentially been cut off economically. This caused a large outmigration from the region to Ciudad Guzmán, Colima, and Guadalajara as people left to look for work. Those people who remained have now adopted what could be considered a peasant lifestyle based on agriculture, especially in the rural communities on the periphery of these two towns.
Gender in Mexico

Post-independence Mexico (after the 1820s) witnessed a shift in the definition and role of family based on French philosophy that emphasized love and benevolence (Franco 1989). Motherhood and family became glorified and, as mothers, women increasingly came to be seen as being both powerful and subordinate (Finkler 1994a). The analytical approach to gender roles in Latin America owes much to Catholicism and the worship of the Virgin Mary, and the concept of Marianismo (LeVine et al. 1986; Navarro 2002; Stevens 1973). The concept of Marianismo was originally put forth by political-scientist Evelyn Stevens (1973) and refers to a female spiritual superiority that implies women are morally and spiritually superior to men. Anthropologists and others have widely critiqued Marianismo as failing to understand the sociocultural and individual context of women’s experiences and their lived existence (Browner and Lewin 1982; Navarro 2002). Frequently noted in gender studies of Latin America is an ideology of sacrifice that pervades women’s daily existence, helping to shape their female identity. As women, their primary role is mother. Motherhood is a stage from which a woman can make sacrifices and embody suffering, thereby becoming like the Virgin in attribute. As long as a woman is ensuring the health and well-being of her children, then her sacrifice and suffering is accepted and legitimized socioculturally (Finkler 1994a; LeVine et al. 1986).

Family is the central unit of social relationships in Mexico, giving meaning to the environment surrounding the individual family members (DiGirolamo and Salgado de Snyder 2008; Kuznesof 1989). Within the family unit, the woman, or mother, is the primary caregiver and agent for socialization. Her role is to maintain family unity and to keep the family together (DiGirolamo and Salgado de Snyder 2008), and her identity is inextricably tied to this role. Research has shown that courtship and dating in Mexico are based on love (Finkler 1994a;
LeVine (1993). However, the closest emotional ties a woman has are with her children and female relatives (Finkler 1994; LeVine et al. 1986). The maternal dyad forms the center of emotional well-being within the family, but the marital dyad is the functional core (Coberly 1980; LeVine et al. 1986; LeVine 1993). The husband-wife relationship is a strong corporate relationship, and has been noted as emotionally weak and lacking intimacy (Coberly 1980; Hunt 1971; Romanucci-Ross 1973).

As Mexican urban centers have experienced a shift from traditional ideologies to Western world views, researchers have attempted to uncover ideological shifts in marriage and family. Younger, more educated women in Mexico City are less accepting of the cultural norm of a double standard of infidelity and physical abuse (LeVine 1993; LeVine et al. 1986). Despite this, given the functionality of the marital dyad, many women are unwilling to leave the marriage because of the devastating economic impact it would have on their lives and their children’s lives (LeVine 1993). Women bind themselves to their children emotionally, focusing on the maternal dyad as a source of emotional satisfaction. As they grow older and reach middle age, many Mexican women no longer falsely believe they can change the behavior of their spouse; instead they settle into a comfortable “sense of humorous well-being” (LeVine et al. 1986:199). They have succeeded as mothers, and that is the most important aspect of the female identity.

LeVine (1993) undertook a study of women in a neighborhood of Mexico City in the 1980s to examine the impact of major economic and social changes made during the 1970s. During the 1970s, the government made large-scale expansionist reforms in the areas of health care and education (LeVine 1993). A nation-wide family planning initiative also resulted in a rapid decrease in fertility (LeVine 1993). Prior to the 1970s, working-class families had been described in the literature as hierarchical, but also as a functioning unit with clearly defined
gender roles. LeVine (1993) found with her subjects in the 1980s that these “city-bred” young women planned their pregnancies and children and attempted to exert some control over their relationships with their husbands. This generation of women had come to expect companionship from their husbands, not just material support. Instead of accepting like their older counterparts the machista ways of some husbands, younger women continue to fight for their marital expectations based on a relationship of mutual respect.

Gender studies in Latin America are not restricted to studies of women, but address the issues of masculinity and machismo in men as well (see Guttman 2003). Guttman (1996) demonstrates the ambiguity of machismo and the realization of impermanent gender roles in a neighborhood in Mexico City. Although many people can readily define machismo, most people point to rural areas or other people to find examples. Guttman (1996) shows that people’s perceptions of appropriate and machista male behavior vary considerably. Carillo (2003b) explains that traditional Mexican society dichotomized men into two categories that defined polarized ends of a spectrum of male attributes. The macho, or hombre (man), is the abusive masculine extreme and the maricón is the effeminate opposite. Carillo (2003b) argues that emerging homosexual identities are not restricted to effeminacy and challenge the traditional masculine boundaries. The transitioning male identity makes it so a man does not need to prove himself, thereby, “helping to lift the burden of expectations about machismo off the shoulders of men” (352). Guttman (1996) makes the case for the role of men in child rearing, arguing that many men take on more of the childcare than society acknowledges. In my own observations, men certainly were involved in watching children when mothers were not able to, especially older men. In public, men were observed carrying children more often than women when a couple was out together. Guttman (1996) observed the same trend. The traditional ideas of “real
men” do not fade easily, however. A friend in Ciudad Guzmán, a well-educated college professor, is married to an equally well-educated college professor. She drives a nicer car than he does and lives in their larger home in Guadalajara while he splits time between there and an apartment in Guzmán. Furthermore, he likes to cook and frequently cooks meals at home in Guadalajara. His neighbor in Guadalajara provoked an argument with him in the street one day and called him a maricón saying he wears the apron in his home and his wife dominates him. He should be ashamed, the neighbor said.

Recent studies of gender, identity, and culture change in rural areas of Mexico are fewer in number than studies in urban areas, however, Coberly (1980) carried out a study of familial relationships in a town in the state of Chiapas. In the rural community of Socoltenango, the marital dyad between husband and wife is a functional relationship, and the maternal dyad is an emotional bond (Coberly 1980). Drawing on Bohannan’s (1971) distinction between institutionalized and moralized relationships in the United States, Coberly (1980) concludes that rural Mexico makes the distinction even greater. “Households are corporate, but kinship is not,” (Coberly 1980:455). In other words, the maternal dyad can be broken with fewer corporate institutional consequence because it is an emotional, personal relationship. This study is an example from rural Mexico that reiterates the emphasis placed on the mother-child bond as a source of personal fulfillment, and the marital dyad as a functional relationship. Other studies (e.g., LeVine 1993) present a functional component to the maternal-child bond, as well. Children, typically male children, are expected to care for their aging parents as adults. It is important for mothers to maintain ties with adult children in an attempt to safeguard future security.
Gender roles in Mexico have slowly changed through time, but men still occupy the position of breadwinner and head of household and women typically take care of the home and children. However, as LeVine (1986, 1993) has shown, women’s expectations of marriage and the marital dyad have begun to shift from passive acceptance to a more active role in demanding certain behaviors and compromises within the marriage. Despite these changes in the marital dyad, the maternal dyad continues to define a woman. Her identity is wrapped up in her ability to nurture her children, martyring herself for the personal suffering she may endure. Some feminist anthropologists argue, however, that this characterization is too broad and does not take into consideration the variation that exists in women’s daily lives and their personal agency in decision-making, as well as individual circumstances (see Montoya et al. 2002).

**Medical Anthropology: Continuing the Legacy of Mexican Anthropology**

Latin America has been the site of countless studies in medical anthropology ranging from shamanism, hallucinogens and the spirit world to less exotic studies of the common cold. Mexico has served as a theoretical testing ground for medical anthropological studies in the context of culture change, social relations, political economy, and medical pluralism. It is possible that medical anthropology theory developed so well in Latin America because of the peasant society and the recognition of the potential for all kinds of comparisons between types of communities such as urban and rural or indigenous and Ladino. With the expansion of anthropological inquiry in this direction, perhaps it became apparent that all aspects of culture showed variability, including medicine. Many of the first medical anthropological studies in Mexico focused on healers, or on the development of theories of ethnomedicine and disease, although there were also projects aiming to understand choice in a pluralistic setting.

In his book, *Disease and Social Behavior*, Fabrega (1974) discusses his research on
Ladino theories of disease in the highlands of Chiapas. In this region, the Ladino theory of disease is both sociopsychological and physiological, stimulating Fabrega to describe it as “a case study in psychosomatic medicine” (1974:223). Because this theory of disease contrasts with the biomedical system of care, individuals who seek care from the clinics in the city may experience difficulty. Cassel et al. (1960) discuss incongruency in models of care as a potential source of stress, thus placing the body in a susceptible state. Fabrega argues that recognizing this conflict creates a need to re-examine the study of disease in more “complex and urban societies” (1974:223). Additionally, Fabrega (1974) emphasizes the contribution this type of study can make to ethnographic methodology in medical anthropology and medical ecology. If the investigator does not talk to the people who are classified as having a certain disease and uncover the emic perspectives, then the biomedical definition of the disease is perpetuated by ignoring folk definitions and etiologies. Fabrega (1974) recognized the psychosomatic, or embodied, social reality of Ladino theories of illness and disease, much like Napolitano (2002) found in her more recent study in Guadalajara.

Building on this notion of a theory of disease that includes folk definitions in addition to biomedical definitions, anthropologists have studied ethnomedical classifications and knowledge of sickness (see Metzger and Williams 1966). Another popular avenue in the study of folk concepts is to examine contrasting categories such as folk versus biomedical and healer versus nonhealer. For example, Fabrega and Silver (1973) observed the differences in how Zinacantec shamans and their patients think and act about illness. Garro (1986) expanded the ethnomedical literature by highlighting intracultural variation in a comparison of traditional curers and noncurers in a Tarascan community. She found that although knowledge is more concentrated among curers (i.e., agreement is stronger among curers) the knowledge of noncurers does not
constitute a different system of medical beliefs. A theory of cultural consensus posits that informants who are in stronger agreement with each other are more culturally competent in a shared cultural model. Knowledge from culturally competent informants is more likely to be closely represented by the model (Romney et al. 1986). Therefore, studies such as that of Garro (1986) provide evidence that knowledge is shared among those with authority and laypeople, however, there are members of a culture who have more “knowledge” than other members and can provide key information for building a model of a given domain. Key informants can be identified in cultural consensus analysis as those persons with the highest cultural competence in the shared model. They help the researcher, who is an “outsider,” by further explaining cultural phenomena in a model.

Research guided by a binary folk versus biomedical question also contributes to the study of medical pluralism in general. Mexico has been the site of numerous studies of medical pluralism, some of which have become major influences in medical anthropology. After decades of studying both spiritualist healers and biomedical practitioners and their patients, Finkler (1994b) compiled her findings into a discussion of the strengths and weaknesses of dissimilar medical systems. The discussion informs cross-cultural understanding of the roles of medical systems in a pluralistic setting. One of the key findings is that (following Finkler's distinction between healers and physicians) the biomedical training of the physician streamlines analysis into concrete dimensions of time and space (i.e., the patient needs to be able to pinpoint a moment in time when pain in a certain part of the body began), the germ theory, and individual responsibility. Thus, a physician will localize disease in a specific body part and find a specific blame in an external pathogen or the individual. A healer, on the other hand, recognizes the wholeness of the individual and understands that sickness may be connected to personal
suffering (Finkler 2001). Again, Finkler’s findings reiterate those of Fabrega (1974) and Napolitano (2002) that Mexican etiologies are not strictly physiological, but reflect social reality and emotions.

McClain (1975) employed the term ethno-obstetrics to describe what she viewed as the conceptions and practices of lay people and traditional birth attendants. An underlying theoretical premise of her study was to understand the effects of acculturation and culture change on obstetric knowledge and behavior. In her study of reproduction in Ajijic, located in Jalisco, Mexico, McClain (1975) examined the two systems (ethno-obstetrics and bio-obstetrics) from the standpoint that they are historically different and have dissimilar views of the body and the process of childbirth. Young (1994) cites this binary approach as a shortcoming in the study of pluralistic medical settings because the distinction is not always clearly defined. My research first examines a model of a good pregnancy to determine if, in fact, there is one model with elements from both ethno- and bio-obstetrics, or if there are two separate models to which Jaliscan women adhere, with variability.

Mexico has also provided opportunities to study the integration and adoption of biomedicine into the medical understandings of a culture, not as a contrasting alternative, but rather as one of the many available choices for health care and maintenance. In her study of biomedicine at a public hospital in Mexico City, Finkler (2001) discovered that practitioners of biomedicine refer to their practice as “Mexican medicine.” Anthropologists recognize that medicine is a cultural artifact (Hahn and Gaines 1985) and Finkler’s (2001) extensive investigation of biomedicine clearly illustrates this idea. Similarly, Baer and colleagues (1999) examined patients’ knowledge of the common cold and found that many people define symptoms and illnesses according to hot and cold properties, showing how biomedical disease
concepts have been integrated with existing theories of disease in the general population. Another finding from Finkler’s (2001) study of physicians and patients is that in the sample population there were identifiable typical symptoms unique to the culture. Interestingly, physicians’ analyses of these presenting symptoms were not strictly based on medical training, but included idiosyncratic elements of diagnosis as well. Again, these studies illustrate the cultural characteristics of biomedicine and emphasize that modernization is not a uniform process. Furthermore, variation is exhibited both interculturally and intraculturally.

Baer et al. (2004) carried out another project comparing physicians and patients in Mexico and in a U. S. border town. The results lend further support to the idea of medicine as a cultural artifact, showing that biomedicine is not universal. They found significant agreement among physicians in each country, however, each group of physicians shared knowledge more closely with laypersons in their own countries than with foreign physicians. Thus, biomedicine is culturally constructed according to the setting in which it is utilized and practiced, and is more culturally defined than professionally defined (Baer et al. 2004).

*Medical Choice in a Mexican Village* (Young 1994) was one of the first attempts in anthropology to study treatment choice in a pluralistic setting. Young (1994) developed a cognitive model of decision-making based on types of illness. Although political-economic factors were not accounted for in the model, Young (1994) noted that informants stated a certain healer was desirable in a given situation, and money and access were factors in choosing a treatment alternative. DeWalt (1977) also studied treatment choice in the Mexican town of Puerto de las Piedras, a community that was undergoing rapid culture change at the time of her investigation. Three epistemologies were identified as available to the community: the traditional system of healing based on humoral theory, Western medicine, and homeopathy.
DeWalt (1977) notes, as does Young (1994), that there is no “unidimensional continuum” of traditional to modern medicine that governs treatment seeking behavior. In Puerto de las Piedras, wealth was the most important factor in choosing to seek care from a physician. The recognition that a multiplicity of factors guides health behavior (DeWalt 1977; Young 1994; see also Oths 1994 for a similar discussion of treatment-seeking behavior in the Peruvian Andes) has significant impact on the study of medical pluralism. Interestingly, in Puerto de las Piedras, ethnicity was related to higher use of traditional healers and herbs, in part because of ethnic ties with tradition, but also because indigenous peoples tend to comprise the lower economic sector. Thus, DeWalt (1977) concludes that “orientation to the modern world,” defined as having higher education and less Indian cultural identification, may be a path toward more Western ideas of health and health behavior.

The study of ethnomedicine has received a great deal of attention in Mexico. Two popular areas of research have been folk healers and folk illnesses. A seminal work by Arthur Rubel and colleagues (1984) on susto (fright or fright sickness) was important both methodologically and theoretically. It was the first attempt to show that a folk illness could be studied epidemiologically with a multidisciplinary team, and that there is variation in knowledge and behavior related to susto. In the researchers’ own words, “the extent to which culture provides the form in which disease becomes illness and then sickness is one of the most fascinating inquiries in cross-cultural research” (1984:5).

The approach in this study is centered on the acknowledgement that the symptoms of susto are not culture-bound, but instead are found cross-culturally as illnesses with different monikers. This recognition was one reason the team chose to examine populations that differ in language and culture, but share regionality and nationality. Rubel et al. (1984) examined
samples from three Mexican populations in Oaxaca: Mestizo, Zapotec, and Chinantec. Not only was this research undertaken with anticipation of variability, but care was also taken to understand susto as it is locally, not biomedically, defined. In other words, Rubel et al. (1984) did not apply biomedical definitions and diagnoses prior to gathering data, but rather wanted to base their conclusions on empirical testing and observation. In this respect, they followed and added to a growing concern in anthropology that all medical systems were being considered with pre-emptive application of biomedical dogma (Rubel et al. 1984). This dissertation research is a comparative study of sites that differ according to degree of urbanization, globalization, and access and availability of types of practitioners. Both traditional and biomedical beliefs are examined from an emic perspective.

**Comparative Research and Medical Anthropology in Mexico**

Cross-cultural comparative research has received mixed degrees of acceptance as anthropologists have worked to improve aspects of the approach (Rubel and Moore 2001). As Rubel and Moore (2001) note, the distinction made by Kleinman (1973, 1980) and Eisenberg (1977) between disease as a biological manifestation and illness as a cultural construction provided the first methodology for studying the cultural aspects of disease independent from its biology. Rubel and Moore (2001) discuss three comparative approaches that have been distinguished in the literature: limited cross-cultural comparisons of different groups sharing the same region, within-society comparison, and holoegistic or worldwide cross-cultural study.

The susto study discussed above is an example of a limited cross-cultural comparison between different groups sharing the same region (Rubel and Moore 2001). To tease out the shared characteristics that define susto and set it apart from other health and social issues, Rubel et al. (1984) noted objective signs of the disease and subjective symptoms of illness, and
incorporated a test for psychiatric impairment and measures of social stress (Rubel and Moore 2001). This combination of methodology allowed for an examination of a regional cross-cultural comparison of a folk illness, as well as an epidemiological analysis.

Rubel and Moore (2001) also carried out a within-society comparison in Mexico examining humoral knowledge related to tuberculosis in which a clinically diagnosable disease with repetitive measurable symptoms was chosen to use as a control for the investigation of the influence of gender, gender roles, and health knowledge. The responses, including diagnostic and treatment strategies, are culturally constructed and were therefore used as culturally dependent variables. The research was conducted in two large metropolitan areas in Mexico, Guadalajara and Ensenada. Contemporary arguments purport that belief in the humoral theory of disease is attenuating, and there is a large degree of variation in knowledge and adherence (Rubel and Moore 2001). Rubel and Moore (2001) report a clearly defined model of humoral knowledge both within and between the two large cities. Variation is significant according to gender lines, with women showing more consensus than men.

Cultural consensus analysis has proven a useful methodological approach not only for intracultural variation, but also for cross-cultural analysis of intercultural variation, and has been used extensively in Latin America. In a study of another folk illness, empacho, Weller et al. (1993) carried out a multisite study using the shared methodology of consensus analysis to determine the similarities and differences across regional and national boundaries. The research team conducted a project in Guatemala, one in Mexico, and two in the United States (Mexican-Americans and Puerto Ricans). Using ethnographic research, they were able to formulate culture-specific interviews to elicit cultural models of empacho in each of the four sites. Because of the use of shared methodology, the results allow for cross-cultural comparisons. Furthermore,
the results of this project corroborate the independent findings earlier studies carried out by the same team members. However, because data from each sample was elicited using shared techniques in the multisite project, knowledge of intercultural variation in empacho beliefs and behaviors was increased by the ability of the structured format to highlight points of departure for agreement and variability. The authors of this study conclude that comparisons between groups can only be made from systematically collected data, however the research needs to be ethnographically informed, thus, the comparative aspect is the final step (Weller et al. 1993).

The study of Baer et al. (2004) used a cultural consensus methodology in each of the samples to arrive at comparable results useful in assessing intracultural and intercultural variation. This is another example of the benefits of shared methodology for comparative research because the methods of cultural consensus analysis are replicable. Anthropology may have begun to adequately address the question of ethnographic validity brought up by Redfield (1956) with the goal now shifted toward continuing to refine and improve methodology.

Some medical anthropologists have undertaken comparative research with bodily processes as the focus of investigation (Rubel and Moore 2001). Berlin and Berlin (1996) compared cultural responses to gastrointestinal disease in two highland Maya groups in Chiapas. The two groups share regional proximity and are linguistically similar. Jordan (1993) carried out a groundbreaking project that investigated childbirth in four cultures: Yucatan (Mexico), Holland, Sweden, and the United States. Jordan (1993) argues that at the time of her research, there were not sufficient categories or information for crosscultural comparison of childbirth, in other words, “no conceptual scheme…for the comparative analysis of the ways in which the universal biology of birth is mediated and interpreted by culture-specific practices” (9). Furthermore, a divide between the medical profession and anthropology forced the focus of
investigations into those of pathology and physiology or native practitioners and ritual. *Birth in Four Cultures* was an endeavor aimed at identifying shared aspects of a biological process and comparing them across cultures within a biosocial framework. Thus, Jordan (1993) attempted to bridge the divide between medicine and anthropology and isolate features of the birth process that were both social and biological, and could be operationalized comparatively. This dissertation uses consistent methodology between sites and within sites to uncover similarities and differences in prenatal knowledge and behavior.

**Pregnancy and Childbirth in Mexico**

Medical anthropologists have bridged theoretical and methodological gaps in anthropology, and Mexico has been the site of a large number of pivotal works. Another area of anthropology, the anthropology of birth, lies in the domain of both medical anthropology and gender studies. Building on Jordan’s (1993) paramount work, as well as that of McClain (1975), anthropologists have since generated sundry studies rooted in the anthropology of birth in Mexico. Two of these later works (Sargent and Bascope 1997; Sesia 1997) will be discussed below for their importance in development of theory, although they certainly do not exhaustively represent the extent of the research in reproductive health in Mexico.

*Birth in Four Cultures* (Jordan 1993) began a tradition of reproductive study in Mexico that, in the years since, has been the basis of advances in both theory and method. Jordan (1993) embedded herself as a midwife in the Yucatan. She sought to understand how reproduction is culturally constructed, at the same time exhibiting the rationality of birthing systems in their cultural contexts. In the same years as Jordan was carrying out her work in the Yucatan, McClain (1975) was immersing herself in the reproductive system of Ajijic, located in Jalisco, Mexico. The focus of her investigation was what she called “ethno-obstetrics,” which
constituted the traditional reproductive beliefs and behaviors of the inhabitants of the town. Both Jordan (1993) and McClain (1975) reported that traditional birth attendants incorporate modern obstetrical tools and techniques into their practice.

The concept of authoritative knowledge is a dominant theme in the reproductive health literature in anthropology. Jordan (1997) was instrumental in bringing about awareness of this concept when studying healer-patient relations and the proliferation of knowledge in a medical system. Although discussed in terms of medicine and reproductive health, Jordan notes that in any given domain where more than one system of knowledge exists, one system tends to retain dominance and become the legitimized system, while the other existent systems tend to be devalued (Jordan 1997). As a theoretical construct, authoritative knowledge has been incorporated into a number of other important studies in reproductive health of Mexico.

Sargent and Bascope (1997) devised a cross-cultural comparative analysis of birthing systems in three cultures, focusing on the authoritative knowledge, or “ways of knowing about birth” in Mexico, Texas, and Jamaica. One of the aims of the project was to examine the relationship between the distribution of knowledge and the use of technology during pregnancy and the birth process. Jordan (1993) delineated birthing systems according to technology use and described the Mayan birthing system in which she participated as “low-technology” and the other three systems of the United States, Holland and Sweden as “high-technology.” Sargent and Bascope (1997) found that in biomedical obstetrics (i.e., high-technology obstetrics) authoritative knowledge lies with the biomedical system. In a high technology birth, the persons with the knowledge and control of the technology are viewed as the authority, whereas, in a low-technology system, such as the Maya, authoritative knowledge is not exclusive to the midwife. Instead it is shared between the midwife and other adult women of the community (Sargent and
Sesia (1997) built on the work of both Jordan (1993) and McClain (1975) incorporating the concepts of “authoritative knowledge” and “ethno-obstetrics” into her work in Oaxaca. Sesia (1997) found that not only did midwives and adult women share authoritative knowledge of ethno-obstetrics, but men also. Thus, one key finding of this study is that training programs for midwives does not convert their practice to a bio-obstetric practice because the authoritative knowledge of the midwife is supported and reproduced by the community in which she practices. Therefore, the practice of the midwife must fit into the expectations of the community in order for her to continue to assist births. Sesia (1997) recommends that biomedical personnel be trained in ethno-obstetric techniques and that all persons involved in the decision-making are included in intervention programs, not just the midwives. All of these studies represent decades of reproductive health research in Mexico in which anthropologists have continued to add to theory and knowledge about pluralism in birthing alternatives. Jordan (1993) and McClain (1975) were instrumental in theory development, and other researchers have continued this process.

**Conclusion**

The literature discussed in this chapter not only provides a background for the project at hand within the Mexican context, but also aims to illuminate that processes of culture change, whether called urbanization, globalization, modernization, or development, are not linear processes. Each community studied is not placed along a well-defined ahistorical continuum. Instead, the studies highlighted in this chapter construct a multi-layered approach to studying any community within a paradigm of culture change.

Biomedicine, like other Western institutions and practices, is not uniformly adopted by
cultures worldwide, nor is it uniformly adopted within a culture. Comparative studies can reveal the complexities involved in treatment-seeking behavior and decision-making, especially in a pluralistic medical setting like Mexico. Anthropologists have shown that individuals make medical choices based on traditional and biomedical theories of disease (and illness and health), political-economic factors, and sociodemographic factors. In the domain of reproductive health, Mexican women have not fully embraced Western bio-obstetrics at the expense of the traditional system, but instead appear to use both bio- and ethno-obstetrics.
CHAPTER SIX: RESEARCH SETTING

Introduction

The aim of this chapter is to first provide a brief history of the political-economy of Mexico and describe the recent health care reform of 2003. The reform is an important event to understand for this research because it is likely a factor in getting women to early and regular prenatal care. Finally, a brief description is given for each of the areas where the research was conducted.

History of Mexico

Mexico gained independence from Spain in 1821. Santa Anna gained power in 1832 and, after he approved a radical amendment to the constitution that supported the institutionalizing of the centralized government, civil war broke out. One of the territories to secede, form its own government, and claim independence became the Republic of Texas. It was successful in defeating Santa Anna, resulting in a large territory loss for Mexico, and eventually was annexed by the United States. The 1800s were marked by dictatorships, with Santa Anna continually going in and out of power. The Mexican-American war, 1846-1848, was based on a border dispute and resulted in more territorial loss for Mexico, including California. Santa Anna was overthrown in 1855 and the country engaged in a series of liberal reforms, spearheaded by Benito Juarez. After a brief interlude under reign of French emperor Maximilian from 1862-1867 (installed by the Hapsburgs in Austria), Juarez regained power until 1872. In 1876, Porfirio Diaz overthrew the government and began a 30-year dictatorship. In 1910, the Mexican Revolution began and continued violently until 1920 (Meyer et al. 2007).
In 1911, Diaz resigned in the face of the opposing leaders of the Revolution and went into exile in France. The Revolution period is characterized by assassinations and overthrows until 1920. The Mexican Constitution of 1917, created under Venustiano Carranza, still guides Mexican Government. Alvaro Obregon came into power in 1920 and successfully initiated social liberalization, addressing the rule of the Catholic Church, education, and women’s liberation (Meyer et al. 2007).

For 71 years, Mexico had a single-party government, dominated by PRI (Institutional Revolutionary Party), which first gained power in 1929. The election of Vicente Fox in 2000 ended decades of political hegemony. The government of Mexico was, in theory, like that of the United States, with an executive, legislative and judicial branch. Because of a lack of diversity in the government, the executive branch held the power to enact and change policies. The administration of Fox, a member of PAN (National Action Party), instituted a divided government, establishing a new relationship between the executive and legislative branches. The system of checks and balances had already begun to erode the power of PRI in the 1990s with three political parties having clout in policy-making (PRI, PAN, and PRD, the Democratic Revolutionary Party). With Fox in office, the president’s party no longer held all power. Instead, policy-making power was located in whichever political party was leading the country’s ideology and had more members in office (Nacif 2005).

In 2006, when I first arrived in Mexico, the country was in upheaval over disputed recent presidential elections in which PAN candidate Felipe Calderón was declared the winner. Supporters of PRD candidate Andrés Manuel López Obrador claimed that the elections had been rigged and were calling for a revote. Obrador won 35.3 percent of the popular vote and Calderon had 35.9 percent (IFE 2009). In fact, during the first few weeks I was in Jalisco, several
organized protests departed from Ciudad Guzmán to travel to Mexico City. As it became apparent that Calderón would assume office, protests and political talk dissipated.

**Economy of Mexico**

Lázaro Cárdenas was the first PRI president to initiate massive economic reform. He nationalized the oil company in 1938, nationalized the electric industry, started land reform, and initiated a program to distribute free textbooks to children (Meyer et al. 2007). The Mexican economy was viewed as successful and made large economic gains until the 1970s, although in the 1950s there was a slowdown in economic expansion (Glade 1963). The Mexican economy was characterized by an import-substitution industrialization (ISI) model from the 1930s to the 1980s, but in the 1980s there was a change in the development model. The ISI model is based on the idea that a country should try to reduce dependence on foreign imports by increasing domestic industrialization. The new model supports the market over regulation, private ownership over public ownership and competition over protection. In 1990, Mexico began to seek a free trade agreement with the United States, becoming successful in 1994 with NAFTA (North American Free Trade Agreement). All of this was prompted by the deep economic crisis of 1982. The recovery was slow and it was not until the early 1990s that the economic reform was viewed as successful (Lustig 1992).

**Health Care in Mexico**

Early in its history as an independent country, Mexico became an international leader in health care. The National School of Medicine opened in 1866 (Penyak 2003). Mexico has a long history of evidence-based medical practice, establishing one of the first schools of public health in the world in 1922. In 1943, Mexico created the Ministry of Health and the Mexican Institute of Social Security (IMSS) for salaried workers in the formal sector (i.e., those with
legitimate jobs, declared by their employers to IMSS) and self-employed workers. In 1960, the
Institute of Social Services and Security for Civil Servants (ISSSTE) was created for federal
employees and their families. These were the first public health insurance programs. The
National Public Health Institute was created in 1987 with a focus on bringing evidence, analysis,
and information collection into policy-making. Before the 2003 health care reform, more than
half of all health expenditures were paid out-of-pocket, primarily by Mexico’s poor and
uninsured. The National Health Program of 2001 was designed to attempt to alleviate out-of-
pocket spending and resource allocation disparity, among other factors. Prior to the health care
reform of 2003, over half of Mexican households were excluded from the formal, public
insurance programs (Knaul and Frenk 2005). In 2003, 40 percent of the formal sector workers
and their families were covered by IMSS, seven percent of public sector workers and their
families by ISSSTE, and two to three percent by private insurers. Over half of the population
(approximately 50 million) had no insurance at all (Knaul and Frenk 2005). These people were
paying the bulk of out-of-pocket expenses at both public and private clinics and for medicines,
constituting a much larger proportion of their household income than people of higher income
who may pay out-of-pocket for insurance or health services. The indigent hospitals have been
historically viewed as providing inadequate care, causing the uninsured to seek costlier care
(Knaul and Frenk 2005).

The 2003 reform went into operation on January 1, 2004 and aims to have insurance
available to all uninsured Mexicans by 2010. Family contributions to the Seguro Popular
(People’s Insurance) are based on a sliding-scale subsidy that operates under the guiding
principal that no family should contribute more than a fair share of disposable income. Families
in the lowest two quintiles do not have to contribute monetarily, but do have to adhere to several
regulations, such as attending regular health appointments and health education (Knaul and Frenk 2005). This is why participants in this dissertation research who have Seguro Popular described having to attend all of their appointments to get their coverage at minimal cost.

Families above the lowest two income quintiles pay a fixed, equal proportion of their disposable income. Seguro Popular was a pilot program from 2001-2003 and over one million families were involved by August 2004, representing 10 percent of the uninsured in Mexico (Knaul and Frenk 2005). Table 6.1 shows the total population and the number of residents covered by IMSS, ISSSTE, and Seguro Popular by 2005 in each of the towns where this research was conducted. Certainly by the time I was interviewing participants in 2006-2007 there had been an increase in coverage, as many of the participants in rural areas have Seguro Popular. It is apparent from the table that the majority of insured in the cities and larger towns is covered by IMSS, while the majority in the villages is covered by Seguro Popular.

<table>
<thead>
<tr>
<th>Site</th>
<th>Population</th>
<th>IMSS No. (%)</th>
<th>ISSSTE No. (%)</th>
<th>Seguro Popular No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guadalajara (county)</td>
<td>1,600,940</td>
<td>811,054 (50.7)</td>
<td>42,017 (2.6)</td>
<td>24,318 (1.5)</td>
</tr>
<tr>
<td>Tonalá (county)</td>
<td>408,729</td>
<td>171,799 (42.0)</td>
<td>6610 (1.6)</td>
<td>15,240 (3.7)</td>
</tr>
<tr>
<td>Ciudad Guzmán</td>
<td>93,609</td>
<td>43,381 (46.3)</td>
<td>8380 (9.0)</td>
<td>2926 (3.1)</td>
</tr>
<tr>
<td>Tuxpan</td>
<td>26,134</td>
<td>8651 (33.1)</td>
<td>1162 (4.5)</td>
<td>3019 (11.6)</td>
</tr>
<tr>
<td>Zapotiltic</td>
<td>21,440</td>
<td>9182 (42.8)</td>
<td>525 (2.5)</td>
<td>1248 (5.8)</td>
</tr>
<tr>
<td>Tecalitlán</td>
<td>12,053</td>
<td>3152 (26.6)</td>
<td>364 (3.0)</td>
<td>1127 (9.4)</td>
</tr>
<tr>
<td>Zapotitlán de Vadillo</td>
<td>3115</td>
<td>597 (19.2)</td>
<td>174 (5.6)</td>
<td>7 (0.2)</td>
</tr>
<tr>
<td>José María Morelos</td>
<td>2567</td>
<td>405 (15.8)</td>
<td>133 (5.2)</td>
<td>762 (29.7)</td>
</tr>
<tr>
<td>Copala</td>
<td>2441</td>
<td>237 (9.7)</td>
<td>67 (2.7)</td>
<td>45 (18.4)</td>
</tr>
<tr>
<td>Jiquilpan</td>
<td>1656</td>
<td>183</td>
<td>47</td>
<td>422</td>
</tr>
<tr>
<td>Location</td>
<td>Population</td>
<td>Urban</td>
<td>Semi-Urban</td>
<td>Cabecera</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------</td>
<td>-------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>San Juan Espanatíca</td>
<td>803</td>
<td>100</td>
<td>15</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(12.5)</td>
<td>(1.9)</td>
<td>(20.9)</td>
</tr>
<tr>
<td>La Yerbabuena</td>
<td>334</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0)</td>
<td>(0.0)</td>
<td>(65.6)</td>
</tr>
<tr>
<td>El Guayabo</td>
<td>279</td>
<td>9</td>
<td>6</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.2)</td>
<td>(2.2)</td>
<td>(43.4)</td>
</tr>
<tr>
<td>Poncitlán</td>
<td>205</td>
<td>31</td>
<td>0</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15.1)</td>
<td>(0.0)</td>
<td>(56.6)</td>
</tr>
<tr>
<td>Colomos</td>
<td>200</td>
<td>1</td>
<td>5</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.5)</td>
<td>(2.5)</td>
<td>(37.0)</td>
</tr>
<tr>
<td>Los Laureles</td>
<td>196</td>
<td>6</td>
<td>0</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.1)</td>
<td>(0.0)</td>
<td>(57.7)</td>
</tr>
<tr>
<td>San Isidro</td>
<td>88</td>
<td>10</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11.4)</td>
<td>(0.0)</td>
<td>(2.3)</td>
</tr>
</tbody>
</table>

**Figure 6.1.** Google Earth image of Jalisco (outlined in white) with each research site represented by a pinpoint (red=urban, green=semi-urban, brown/orange=cabecera, yellow=ranchito).
Figure 6.2. Map of research area with sites outlined in blue, volcanos in red.
Metropolitan Zone of Guadalajara

Figure 6.1 shows a Google Earth image of Jalisco with each of the sites in Phases I and II represented by a pinpoint: red=urban, green=semi-urban, brown/orange=cabecera, and yellow=ranchito. The border of Jalisco is indicated by the white line. The temperature in all of the areas of research typically stays between 60 and 80 degrees Farhenheit. The rainy season is generally from May to September. The Metropolitan Zone of Guadalajara (ZMG) sits at an elevation of 5085 feet and is comprised of eight separate municipalities, including Tonalá and Guadalajara, all of which form one conglomerate, with imperceptible boundaries. The poorest sectors of the population live on the periphery of the ZMG. Tonalá has a large contingent of lower-class residents, classified as “marginado,” or marginal, by the government. The city of Guadalajara has a population of 1,600,940 (INEGI 2009). The entire population of the ZMG in 2005 was approximately 4,000,000. Guadalajara is the second largest city in Mexico and is increasingly becoming an economic and political center. The city has an integrated mass transit system (both underground and above ground), an international airport and serves as a commerce hub with its own exposition and convention center and World Trade Center. Over half a dozen universities and technical schools are found in the ZMG. Guadalajara is home to the Chivas, a nationally popular soccer team, and boasts a large soccer stadium. Furthermore, there are several theaters and an opera house, and many smaller arts centers. Several large shopping malls are found in Guadalajara with upscale shops, most of them located in the upper-class areas such as Zapopan. Many restaurants of varying international cuisine, including five-star restaurants and hotels, cater to both the large tourist industry and the elite citizenry. Finally, Guadalajara also has many U.S. and other international chains, including Wal-Mart, Sam’s Club, Home Depot,
Applebee’s, Chili’s, Radio Shack, and countless fast-food restaurants, both Mexican and international. Guadalajara will host the Panamerican Games in 2011.

The population of Guadalajara is considered primarily upper and middle class by the government, although there are also large proportions of urban poor living in marginal conditions, most of them on the periphery of the ZMG. Guadalajara is considered Mexico’s Silicon Valley because of its electronics industry. It also leads Mexico in software and informatics development. In addition, Guadalajara has thriving textile, metalwork, nutritional products, and pharmaceutical industries.

The population of the county of Tonalá in 2005 was 408,729 (INEGI 2009). Tonalá is a mecca of artisanry and holds an enormous market twice a week. People from all over Mexico come to sell arts and crafts, household items, clothing, CDs and DVDs, small electronics and just about anything else imaginable. The market is held on about a half mile stretch of a large road and spills into side streets and parking lots. Along this road are also dozens of stores selling art, furniture, pottery, and other crafts, both local and non-local. On the periphery of the market and further out in other areas of Tonalá are warehouses and factories making all kinds of goods, such as furniture, ironworks, ceramics, et cetera. Tonalá has a significant indigenous population that has migrated from Oaxaca and Chiapas to sell handmade clothing in the market. As a result of the artisanry, there are Americans, expatriates from other countries, wealthy Mexicans, and poverty-stricken urban poor living in Tonalá. The majority of the population is poor. I conducted freelisting tasks in some of the most marginal areas of the ZMG, located in Tonalá, where some people live in crowded conditions on dirt streets littered with trash. Some middle-class interviews were obtained from Tonalá, as well, but most of the middle-class interviews came from Guadalajara. All of the upper class interviews were from Guadalajara and Zapopan.
With the aid of Dr. Javier Garcia de Alba Garcia, I met with the director of the IMSS clinic in Tonalá and was given a list of the midwives they have working for them. From this list, my research assistant and I were able to meet some of the midwives, leading us to conduct interviews in a neighborhood on the outskirts of Tonalá called Jauja.

![Road in front of Dona Lancha’s home](image)

**Figure 6.3.** Road in front of Dona Lancha’s home
Jauja closely resembles a small town or village because of its isolation from the rest of Tonalá (see Figure 6.2). Most of the people there work in the factories or industries of Tonalá, such as brickmaking, ceramics, and ironworks (see Figures 6.3, 6.4, and 6.5). The woman in the foreground in Figures 6.4 and 6.5 is pregnant. Her home that is shared with eight adults and three children can be seen in the photo on the left. In Figure 6.5, the woman is knee-deep in mud, mixing it for bricks. Other people work in Guadalajara, but the bus ride from Jauja to Guadalajara requires several bus changes and can take up to an hour. By car it is 45 minutes in heavy traffic.
Despite being on the periphery, Jaujans lead an urban lifestyle. The roads of Jauja are dirt with chickens running around, but the people are connected to the ZMG and, especially, Tonalá. To get into the downtown area of Tonalá is only 10 minutes by car, or 20 minutes by bus and many people have family in Tonalá and Guadalajara. Most of the residents have lived in the ZMG their entire lives.
Figure 6.6. Pregnant woman mixing mud for bricks with her feet.

Ciudad Guzmán

Ciudad Guzmán and most of the cabeceras and ranchitos in this study are situated around two volcanos, one dormant and one active.

Figure 6.7. Volcán del Fuego and Nevado de Colima, eastern view.
The Nevado de Colima, 20 miles west of Guzmán, is dormant with an elevation of 12,631 feet and lies just north of the active Vulcán del Fuego, whose top can just be seen from the city. The Vulcán del Fuego is a cone volcano and spits out smoke and steam daily, occasionally sending enough ash into the air to lightly dust the city.

![Image](image_url)

**Figure 6.8.** Western view of the volcanos, taken on the road to Copala.

Both Figures 6.6 and 6.7 show the Vulcán del Fuego spewing smoke and ash. Most people carry dusting brushes in their cars to wipe the ash from their windshields before they drive. There is a volcano alert sign in the plaza of Guzmán that is always on yellow. Each morning the radio gives activity and air quality reports and it is not uncommon to see people wearing surgical masks when out of their homes on a day of high activity. The last major eruption was in 2005, when loud explosions could be heard across the region and lava flowed down the sides. Veins of sulfur popped up in the flat areas around the volcano and people pulled up in trucks to load the sulfur to sell.
Ciudad Guzmán is located in a flat valley at an elevation of 4,944 feet, in between the Nevado de Colima to the west, another mountainous area known as Las Peñas to the east, and Lake Zapotlán to the north. Las Peñas is a designated ecological park with hiking trails, a creek, and waterfalls, covered by lava from a time long before anyone ever lived in the area when the Nevado exploded. The Nevado is also a park where hundreds of people go during holidays for recreation, including camping and hiking. The peak of the mountain where the caldera once was gets covered in snow during the winter months of January and February, and it is possible to drive into the park and play in the snow. Thus, at a certain point in the year there is one volcano covered in snow and another next to it “on fire.” Lake Zapotlán (Figure 6.9) has a recreation area, as well. The lake serves as a practice ground for rowing teams, including the Mexican Olympic team.
Ciudad Guzmán lies approximately 100 miles south of Guadalajara and in 2005 had a population of 93,609 (INEGI 2009). A toll highway and a free highway both connect Guadalajara and Guzmán. It is the cabecera, or municipal seat, of Zapotlán el Grande and was once the site of the pre-Colombian kingdom of Zapotlán. The city itself also has the name Zapotlán el Grande, and has a history of officially switching back and forth between monikers.

The economy of Guzmán is primarily agricultural, with predominant crops being corn, sorghum, and alfalfa, as well as a variety of fruits and vegetables. The area also hosts medium-sized industries including ironworks, corn mills, and hog and dairy processing plants. Manufactured goods include furniture and crafts from wood and animal hide, bricks and clay tiles for roofing, and clay crafts (CUSUR 2009). Additionally, the Centro Universitario del Sur (CUSUR), part of the University of Guadalajara system, is located in Guzmán. The city also has a technical college. I chose Guzmán as my home base because of its proximity to the ZMG, rural cabeceras,
and ranchitos. Furthermore, one of my advisors for the project, Dr. Enriqueta Valdez Curiel, lives in Guzmán, teaches qualitative investigations in the medical school at CUSUR, and carries out qualitative investigations in the area on topics related to both health and sexuality, such as curanderismo (traditional healing practice), a local phenomenon of religious dancing in a yearly festival in return for good health, and sexuality in adolescents. Dr. Valdez oversees a radio program called Radio Ado that caters to adolescents, as well as a call-in radio show called Sexotlán el Grande that addresses issues ranging from women’s sexuality and sexual violence to sexual play. On my first trip to Guzmán, I met Evangelina Villanueva Garcia (Evita), a midwife and nurse with IMSS. She later became my research assistant during the second phase of the project. Evita’s practice is described in more detail in chapter 8.

As a semi-urban setting, Guzmán has four hospitals: IMSS, ISSSTE, the Regional Hospital and the Red Cross. There are also at least half a dozen private hospitals, usually with 10-20 beds, in the city. There is one main Health Center and weekly clinics are held throughout the city in neighborhood community centers. IMSS has 13 registered midwives in Guzmán, and Evita knew of at least one other who was not registered. Guzmán is a mix of old and new, still participating in the nationwide custom of closing down during the comida hours of 2:00-5:00 p.m. Even the fast food restaurants such as KFC and Pizza Hut are not open during this time. The young people think of it as a smothering small town and jokingly call it “Guzmán Ranch.” Dozens of internet cafes are found in Guzmán and frequented by the teenagers and college students. Residential wireless internet can be obtained through cable or phone. Many of the young people attend the preparatory school in the new building and go on to attend at least a semester or two at CUSUR or the technical college. Volkswagon has a dealership in Guzmán, and there are two supermarket/department stores (similar to a Wal-Mart) in town. Several large
churches are scattered near the center of town, with the main cathedral being on the large central plaza. The famous Mexican muralist, José Clemente Orozco, is from Guzmán and a fresco dedicated to him adorns the ceiling of the rotunda in the plaza.

Figure 6.11. Cathedral in Ciudad Guzmán.

In the 1980s Guzmán experienced an influx of migration from the surrounding rural areas, and became a receiving community for Guadalajarans escaping the hustle and bustle of metropolitan life. The 1985 earthquake that devastated Mexico City destroyed or damaged about 80 percent of the buildings in Guzmán, according to residents. The cathedral was severely damaged. Some parts remain in disrepair. Earthquakes are common. I experienced at least three in the 15 months I was there. One man told me that the earthquake of 1985 dramatically changed the economy as well, as many people lost their jobs due to damage. He said the eateries that pop up in the evening on sidewalks in front of people’s homes were not common before the earthquake. Many women, and men, walk through the town selling bread and food, pushing ice cream or snack carts, and selling fruits and vegetables (see Figure 6.11).
Figure 6.12. Vendor in Ciudad Guzmán plaza.

The municipal market is open daily except for Sunday and is held inside. The *tianguis*, or public market, is also held everyday, but most vendors only come on Tuesdays and Sundays. The *tianguis* has better prices than the municipal market. The streets of Guzmán are paved, except for the outer areas, some of which are cobblestone or dirt. It is certainly not uncommon to see cowboys riding through the streets as they come into town from nearby ranches to have a drink or buy goods. Guzmán is large enough to have its own bus system, which will reach anywhere in the city in about 15 minutes or less. Most people take the bus or walk, even if they own a car because the bus is cheap (about U.S.80 cents, kids under six are free) and parking can be difficult, plus the town is very condensed and many places are reached easily. Taxi cabs are also frequently used to get somewhere quickly and cost US$2 per ride.

Each October, Guzmán has a month long festival in honor of the patron saint of the city, San José. During this time, a *feria* (fair) is also going on and all hotels are booked solid and the city swells with people coming in from the rural areas for the festivities. Many streets and
buildings in Guzmán are painted green and gold, while flags of this color are hung across roadways (see Figures 6.13 and 6.14).

Figure 6.13. Painted street and houses in Ciudad Guzmán in honor of San José.
Figure 6.14. Houses painted for the festival of San José.

The legend, as told to me by a townsman, is that in the 1600s a traveler stopped in at the hostel and asked if he could leave three wooden boxes and pick them up when he returned from his destination. After it was apparent that he would never return, the hostel owner and several other men decided to open the boxes. Inside they found statues of Mary, Joseph, and baby Jesus (see Figure 6.14). The statues were put inside the church on the plaza near the entrance way. Over time they were moved toward the front until finally making it to the head of the church as more and more people came to pray to the statues.
In the mid-1700s, the city was hit with a massive earthquake and the town came together and wrote a pledge to San José (Joseph) that if he would spare them the death and damage of more earthquakes, they would dance in his honor every year. In October of 1806, another major earthquake hit and the town came together and made a second pledge. I was able to witness the 200th anniversary of this pledge at the Festival of San José in October 2006. The event has gotten so large now that there are festivities and dancing almost every night for 3-4 weeks.
The dancers are called *sonajeros* (literally translated as “baby’s rattle”, the name probably referring to the large wooden and metal rattles carried by the dancers), and families, neighborhoods, and churches have groups that enter in the dancing.
The sonajeros today typically dance for health or prosperity, usually for themselves or a loved one (Valdez Curiel 2006) (see Figures 6.15 and 6.16).

Figure 6.18. Top view of beadwork on sonajero’s hat.

Regional Characteristics

This research project extended to so many ranchitos and cabeceras that giving a history and description of each is beyond the breadth of this dissertation. Therefore, I will divide the area into regions based on proximity and location around Ciudad Guzmán and the volcanos, and briefly discuss the research sites located within each region. See Figures 6.1 and 6.2 for area maps and Table 6.1 for site populations.

The larger cabeceras, or municipal capitals, included in the study have internet cafes and cable television available for residents, while the smallest one, Zapotitlán de Vadillo, is too far from Ciudad Guzman or Colima to receive services. All have a permanently staffed Health
Center, and most have an IMSS clinic as well. The larger ranchitos have a public Health Center, but most only have a Health House. In these areas, if a person wants to have cable television, they must purchase a satellite, much like Dish TV in the United States. Almost every area included in the study has cell phone coverage, although this is relatively new. In one village, San Isidro, my research assistant called the radio station to announce our arrival the next day, only to find out later that one of her friends had purchased a cell phone, making radio arrival announcements unnecessary.

In the cabeceras of Tuxpan and Zapotitlán de Vadillo, I had signed permissions from the directors of the Health Centers to conduct interviews with their patients. In these towns, lists of pregnant women’s addresses were obtained from the Health Centers. We then went to the women’s homes to ask for interviews. In the rest of the towns and villages, my research assistant, Evita, either knew a midwife with IMSS or had a friend there. The midwives introduced us to both clients and other women they knew to be pregnant. Sometimes interviews were conducted in the midwife’s home, and sometimes in the woman’s home. In the places where Evita had a friend, our habit became to drive to that town in the truck, knock on the door of the friend, say hello, and then ask if they knew of any pregnant women. Usually one or two was known, then we would snowball sample from there. It was not unusual for the friend to ask other people in the street, or go next door, or to another friend’s house. The whole process could be lengthy as they discussed who might be pregnant, if that person was home, and were we going to stay for the afternoon meal. We were usually invited to eat the big meal of the day and our interviews had to be conducted around this meal. If we were lucky, decisions would be made about who to go see several hours before the meal and we could conduct at least two, maybe three interviews. If not, we would have to wait until the late afternoon, and sometimes the next
day. This meant driving back to Guzmán for the night because my children were there, and then returning the next day. In Mexico it seems, no one is ever in a hurry.

**South of Ciudad Guzmán, East of the Volcanos**

The Vulcán del Fuego is geographically located in the state of Colima. From Guzmán, one can be in the capital city, also called Colima, in less than 45 minutes by the toll highway. When taking either the free or toll highway south, the Vulcán del Fuego becomes fully visible in roughly 15 minutes. On the free highway, the drive is more scenic, but takes up to an hour and a half because the road curves through the mountains and small towns. Along the toll highway to Guadalajara and Colima, and possibly all over Mexico, there are conspicuous “exits” to allow people to get on and off in-between toll booths, switching back and forth from the free highway to the toll highway. This is because the tolls can be very expensive. From Guzmán to Guadalajara the toll was US$8 at the time of the research. From Guzmán to Colima it was US$5. Using both toll and free highways, I spent over US$100 from Guzmán to the border town of Reynosa. If someone were to drive one of the free highways all the way from Guzmán to Colima, they would pass through Zapotiltic, Tecalitlán, and Pihuamo before arriving at Colima. In this way, the drive could take close to three hours. Many people wishing to avoid paying tolls simply get on and off the toll highway in an effort to save money and time.

The state of Colima is popular for its beaches. The most popular tourist destination is Manzanillo, a major port city and now a famous sport fishing spot. Tourists from all over the world come to Manzanillo, and many Guadalajarans vacation there as well. Before the toll roads were built in the 1980s, the free highway was the only way to get there. Tecalitán and Pihuamo, both south of Guzmán, were major stops along one route of the highway and their economies relied heavily on the traffic. After the toll road cut them off, their economies experienced a
major downturn. Tecalitán is known as the birthplace of the mariachi and, in its heyday, had hotels and restaurants with mariachi music catering to the tourists passing through to the beaches. The economy of Pihuamo was also built around the mines that are there. In the 1980s, most of the mine activity ceased and people were suddenly out of work. These factors, along with the Mexican economic crisis of the 1980s, led many people from the areas south of Guzmán to migrate to Guzmán, Colima, and Guadalajara. Guzmán experienced a large population increase during this time. Today the economy of the area around Tecalitán, including that of San Juan Espanática and Tuxpan, is dependent mainly on the sugar cane industry. Pihuamo still has some mining activity, but many people work in agriculture and logging. Tecalitán is not located up in the mountains, but in the flatlands.

Figure 6.19. Mountainous terrain in southern part of Pihuamo municipio.

Once the road leaves Tecalitán and heads to Pihuamo, it begins a climb to reach the town. From Pihuamo to Colima, the drive is somewhat flat and straight. However, the road that turns south to El Guayabo, still in the county of Pihuamo, twists through mountains, inclining and
declining through small canyons. From the highway, the drive is 30-40 minutes to El Guayabo, passing Colomos ten minutes before El Guayabo. The area is extremely rural and one sometimes has to stop or slow down for horses, donkey, goats, cows, and dogs either sleeping or standing in the road (see Figure 6.19). Once, a tarantula even crossed in front of my truck; another time an iguana.

![Image of cows and people on road](image)

**Figure 6.20.** Obstacles on the road between the main highway and El Guayabo.

El Guayabo is a ranchito where I elicited freelisting, pile sorts, rating tasks. It is the southernmost village in the state located on a river that separates Jalisco from Michoacan. I went there again to interview pregnant women, but there was only one in the area that anyone knew of, in Colomos. I spent several afternoons there with Dr. Benito and his wife eating fried fish from the dammed river in their outdoor eating area. They explained to me that there is nothing to do for income in the area. People support themselves by selling goods and services, but the village has been almost abandoned.
Figure 6.21. Outdoor eating area of Dr. Benito and his wife in El Guayabo.

Only about 75 people actually live there, although there are 279 registered citizens. Those who remain are mostly the very young and the very old. Many empty houses sit along the few streets leading from the plaza. The streets are paved and the road to El Guayabo was paved six years ago. For money, I learned that it is common to work in the marijuana industry. The *narcos* (drug traffickers) will pay up to three times as much as the government subsidy to rent a field to grow marijuana, and the entire family, including children, can be employed to help in the processing and packaging.
El Guayabo has a permanently staffed Health Center that serves the surrounding villages as well. Dr. Benito is a private doctor and has his own exam room in his home. The women of the village told me there is no midwife, although there is a woman who was reported to give the sobada. Dr. Benito delivers babies on an emergency basis, between two and four a year, and sometimes on the side of the road when a couple has waited too late to travel to Colima. Everyone goes to Colima to have their babies, about an hour drive, because it is closer than Guzmán. Before the road was paved, the drive could take up to three hours. El Guayabo also has a main plaza or garden, but no church. The temperature gets much hotter here than in other areas of Jalisco because it is so far south and very dry. Male residents spend much of the afternoon in hammocks and women tend to the children. There is a primary school there, but no secondary school. To achieve an education past sixth grade, the children must be bussed out. The bus from Pihuamo comes once a day. No mail service comes down this way and residents usually have someone in Pihuamo to whom mail can be sent for later pick up.
San Isidro is located in the county of Tecalitán, but is up in the mountains rather than the flat plains and so does not participate much in the sugar cane industry. Instead, people there work in other agricultural endeavors, including marijuana. San Isidro has a Health House with a trained Auxillary, who is one of two midwives in the small village. In San Isidro and the surrounding villages, there are approximately 33 families. San Isidro itself only has a population of 88 (INEGI 2009).

Figure 6.23. Population chart on the wall of the Health House of San Isidro.

Electricity in San Isidro is from solar panels and water is piped from a nearby spring. Houses are freestanding, with outhouses and sometimes a separate kitchen. The main road in San Isidro is cobblestone. They have a church, but no plaza. The bus passes through twice a week and is an hour and a half to two hour drive down to Tecalitán.
I was unable to return to San Isidro for the months during the prenatal interviews due to marijuana season. The military only allowed residents to pass through and the narcos were rumored to be fighting with the military and killing or kidnapping other people. Therefore, it was too dangerous to use the roads. This is one reason many people stay in Tecalitán. A second reason is that during the rainy season the road to San Isidro becomes impassable at times, with deep ruts. Like most mountain roads, the outside edge is a steep drop-off, so driving on it in slick, muddy conditions is perilous. From the road, it is possible to glimpse the Vulcán del Fuego to the northwest.
Figure 6.25. Kitchen in San Isidro, in building separate from the house.

Tuxpan is also located in the area south of Guzmán, but the road to Tuxpan goes directly south from Ciudad Guzman, west of the road to Zapotiltic. It is in the flatlands east of the Vulcán del Fuego. The smell of sulfur wafts through the air on the highway to Tuxpan. Everyone says Tuxpan has a large indigenous contingent, but I never saw that when there. It is a larger cabecera with a small town layout. The plaza and surrounding buildings are the older sections of town, and it is large enough to have colonias, or established neighborhoods, and a bus system. There is an IMSS clinic and a Centro de Salud. The Centro de Salud is very new and modern, having been built in the preceding year. Many residents work in local businesses, but also in the agriculture industry surrounding the town. Some of my freelisting interviews were conducted at a bell pepper farm and packaging plant on the outskirts of Tuxpan. Sugar cane is also a big industry here. In fact, so much sugar cane is grown in the rural area south of Ciudad Guzmán, that at the time of the year when they burn the cane, a “black rain” falls in Guzmán. Literally, black ash falls from the sky for several days.
San Juan Espanatíca (SJE) is in the county of Tuxpan and near that cabecera. The highway toward Tuxpan goes through SJE before turning east to Tuxpan. Several restaurants are located on the main thoroughfare. There is a small plaza, but the church is several blocks away.
Most houses are connected to each other along the dirt roads of the town. I met three midwives who practice in SJE and carried out several prenatal interviews there with clients of the midwives and people they knew. Los Laureles is a small geographical area with homes dispersed throughout, mostly family farmsteads, located approximately five to ten minutes by car from SJE.

![Figure 6.28. Evita and two midwives (sisters) in San Juan Espanatica.](image)
Figure 6.29. A pregnant woman and midwife at the woman’s house in Los Laureles outside of San Juan Espanatica.

Zapotiltic is only 15 minutes south of Guzmán and is a large cabecera (pop. 21,440) with an IMSS clinic, ISSSTE clinic, and a Health Center. The economy of Zapotiltic is reliant both on the agriculture industry (e.g., sugar cane) and the mining of cal, a form of lime used in tortilla making. Several large cal companies are in Zapotiltic. Because it is a sizeable town, it has a large cathedral on the plaza, and is a stop along the bus route bringing people into and out of town from surrounding ranchitos. Many people from Zapotiltic also drive or take the bus into Guzmán for work.
The town of Poncitlán is located just north of Guzmán, about a 15 minute drive. The town is very small and located only five minutes from a cabecera named Atoyac. One of the IMSS midwives lives there. Poncitlán has a Health House (see Figure 6.27).
West of Ciudad Guzmán, West of the Volcanos

Zapotitlán de Vadillo (ZDV) is a cabecera and the largest town in the area, but only has a population of 3115. It is almost two hours to drive there by car from Ciudad Guzmán. By bus it takes a little longer. The bus goes to and from Guzmán once a day. Colima is approximately 15-30 minutes closer by car, therefore, some women from ZDV deliver their babies in Colima, and some deliver in Guzmán. The roads from Guzmán are all paved, but traverse around the Nevado de Colima, making the trip slow until you reach the western flatlands on the other side of the volcano. At a crossroads in the flatlands the road to the left leads to ZDV and the road to the right leads to San Gabriel, where there is the turnoff to Jiquilpan. The road continues past Jiquilpan and on to Tapalpa, passing the turnoff to La Yerbabuena. At the time I was there, the road had washed out in a low spot in between San Gabriel and Tapalpa and was practically impassable.

Figure 6.32. Man on horse in plaza of Zapotitlán de Vadillo.
Figure 6.33. Main church in Zapotitlán de Vadillo.

Twenty minutes before reaching ZDV, the road passes Copala. Copala is large enough to have a Health Center, and also has the only known midwife in the area. There is not a plaza area, but there is a central church for the town. The roads are cobblestone and laid out in a grid pattern. ZDV has a Health Center, but no IMSS or ISSSTE clinics. There is also at least one private physician in ZDV. The town has a spacious plaza with a large old church next to an archway on the cobblestone road. Both cars and cowboys on horses move around the town and people on the outskirts of town live in freestanding homes with gardens.
Most people in small towns like Copala and ZDV have courtyards or back and side yards where they grow fruits and vegetables and keep small livestock, like chickens or rabbits. For
income, the majority of men work in agriculture in these areas. Some women also work in the fields, but may work in stores or restaurants, or sell goods from home.

Figure 6.36. Children coming home from school in Copala.

Figure 6.37. Man loading his donkey in Copala.
By car, Jiquilpan is five minutes outside of San Gabriel, a bigger cabecera than ZDV. With a population of 1656, Jiquilpan has a Health Center, a large plaza, and a church. Most of the men in Jiquilpan work in agriculture. There are tomato farms nearby, and other vegetables and fruits fields, such as strawberries. If they do not work as campesinos, or in the countryside, then they work in construction or another business in nearby San Gabriel. Women sell goods from home if they make an extra income. Jiquilpan is a mixture of old and new, with some houses made from concrete and plaster adjacent to older adobe structures. Most of the houses are adjacent to each other, but have the characteristic openness of the rural homes, with large rooms, and usually a separate kitchen, either inside or out. An odd thing happened in Jiquilpan one day as I was walking down the street. An American woman came up to me and started speaking in English. I was immediately curious about her being there and she told me she had married a migrant in the state of Washington and returned to live with him here and raise a family. Although many people from these villages and small towns migrate back and forth to *el Norte* (the United States), it is extremely unusual to come across an American who has come down to live in a rural town in Mexico.
Figure 6.38. Homes and cornfield in Jiquilpan.

Figure 6.39. Man with donkey carrying firewood in Jiquilpan.

From Guzmán, the quickest way to La Yerbabuena is through Sayula, about 30 minutes northwest. Sayula is a big town with a Wal-Mart and a hospital; most women from the mountains west of Sayula come there to have their babies. From Sayula, the road turns into the
mountains and becomes very steep and curvy until the top of the mountains are reached and the road continues along the ridges to Tapalpa, the nearest cabecera to La Yerbabuena.

Figure 6.40. Homes on hillside in La Yerbabuena.

Figure 6.41. Laundry drying on fences in La Yerbabuena.
Tapalpa is a major tourist destination for people from Colima, Guadalajara, and Ciudad Guzmán and tourists come to rent houses and eat the local delicacy, roasted borrego (a type of sheep). Tapalpa is one of the Magical Towns of Mexico (a designation that gives it exposure as a tourist attraction) and has several popular annual festivals. Because it is a cabecera, it has a Health Center. Thirty minutes first along a paved road, then onto a dirt road, takes you to La Yerbabuena, with a population of 334 and the highest point where I interviewed (elevation 6665 feet).

Figure 6.42. Large kitchen in rural home in Jose María de Morelos.
There is no bus service and it is common to hitchhike to and from Tapalpa for necessities and errands. Work is scarce around the village and some men are gone to el Norte to work, while others work in agriculture or in the forest. I observed one man collecting Spanish moss in large bundles on his donkey and bringing it to sell for nativity scenes. The marijuana industry is rumored to be in the area. One day when visiting, we arrived not an hour after the police had been there conducting a raid and accusing men of working with the narcos. The people were very upset and one little girl described how her father had just been beaten before her eyes. The people swore that the rumors were false and that these men were innocent. Evita took down names and promised to call a lawyer in Guzmán to help.
Most of the houses are open and airy, built with bricks and plastered. As is common in rural areas, the houses stand alone, not connected to other buildings. Some houses have a separate small wooden building housing the kitchen with the cistern nearby for washing dishes.
Outhouses are located separately from most homes. Cows and donkeys roam freely through the dirt streets and along the dirt paths that lead to the more remote homes. There is a small Health House, but for emergency medical care, residents must travel to Tapalpa or Sayula. Women usually go to Sayula to have their babies, although sometimes the clinic in Tapalpa will make an emergency delivery. For monthly prenatal appointments, women go to Tapalpa. The last person born with a midwife is in her 20s and the midwife is 100 years old. No one else is practicing midwifery in the area.

**Figure 6.46.** Retired midwife (left) in La Yerbabuena showing Evita medicinal plants.
Conclusion

Mexico’s history is riddled with political change and upheaval. Its politics have been characterized by dictators and violence. With the election of Vicente Fox in 2000, a pluralistic government was officially set in place with three main political parties. The health reform of 2003 aimed to have affordable, fair insurance available to all people in Mexico by 2010. As a result, even some participants from the most isolated, rural villages in the study have insurance. One goal of this research was to examine variability in cultural competence and cultural consonance in a model of a good pregnancy. In an effort to achieve variability, participants were recruited from a metropolitan zone, semi-urban city, cabeceras, and ranchitos. The cabeceras and ranchitos are quite varied among themselves, ranging widely in population and available resources. Thus, the research setting represents a range of population, economic and site characteristics.

Figure 6.47. Separate outdoor kitchen of retired midwife in La Yerbabuena.
CHAPTER SEVEN: RESEARCH METHODOLOGY

Introduction

Phase I of this project is a cultural domain analysis (CDA) to determine the existence, if any, of one or more cultural models of a good pregnancy in southern Jalisco, Mexico. The research was designed to examine variation within a shared cultural model and variation according to site. A “site” signifies a type of municipality and, except for the semi-urban category, includes more than one locale. For Phase I, sites are limited to three categories, defined as a metropolitan zone, a semi-urban city, and rural towns. The Metropolitan Zone of Guadalajara (ZMG), specifically the cities of Guadalajara and Tonalá, comprise the metropolitan zone site. Ciudad Guzmán represents the semi-urban category. The category of rural towns is a mixture of cabeceras (county seats) and ranchitos (small towns and villages) and includes Zapotiltic, Zapotitlán de Vadillo, Pihuamo, Tecalitlán, El Tule, San Juan Espanatíca, and San Isidro. Cabeceras are referred to as county (or municipal) seats because they are the capital of a municipio, an entity similar to a county in the United States.

Phase II investigates the relationship between cultural consonance in the shared cultural model identified in Phase I and psychosocial and physiological stress response. Four sites were designated as distinct categories in this phase. These include the ZMG, Ciudad Guzmán, rural cabeceras, and ranchitos. Pregnant participants were interviewed in the municipalities of Tonalá and Guadalajara in the ZMG; Ciudad Guzmán; the rural cabeceras of Zapotiltic, Zapotitlán de Vadillo, Tecalitlán, and Tuxpán; and the ranchitos of San Juan Espanatíca, Los Colomos, Los
Laureles, Jiquilpan, Poncitlán, La Yerbabuena, Jose María Morelos, and Copala. Methodology for Phase I will be discussed first followed by a description of methodology for Phase II.

**Phase I: Cultural Domain Analysis**

Phase I was a cultural domain analysis (CDA) comprised of two parts. The first part was an interview and freelisting exercise to generate lists of terms related to what and how women think about maintaining a good pregnancy. The second part was a pile sort and rating exercise of the freelist terms to elicit cognitive dimensions and themes of how women think about pregnancy. Each participant was read an informed consent approved by the Institutional Review Board at the University of Alabama (see Appendix A). No participants declined to participate after the informed consent was read to them. The same informed consent was used for both the freelist and the pile sort and rating tasks with changes reflecting the specific tasks. The first section discusses the interview schedule, sampling and recruitment, and data analysis methodology for the freelisting exercise. The second section discusses the interview schedule, sampling and recruitment, and data analysis methodology for the pile sort and rating task. Due to the medical and potentially sensitive nature of this investigation, permission was obtained from the Secretary of Health in Jalisco (SSJ) to freely conduct interviews on the streets, in people’s homes, or other place chosen by the participant.

**Freelist: Interview Schedule**

The interview schedule for the freelist interview consists of questions about pregnancy experiences, prenatal beliefs and behaviors, social support, and separate freelist exercises of good things for pregnancy, bad things for pregnancy, good foods during pregnancy, bad foods during pregnancy, and social support during pregnancy. I always introduced myself as a student from the United States who was studying pregnancy in Jalisco including what women think
about pregnancy and how they behave. First, I asked women their age, how many children they had, where they had delivered their babies, and where they themselves were born (e.g., hospital or home with a doctor or midwife). Participants were asked to list everything they could think of about pregnancy, including what things are good for pregnancy, what things are bad for pregnancy, and what a pregnant woman should do or not do. They were also asked to list all foods that are good and all foods that are bad for pregnancy. The freelist of social support was a task to list everyone the respondent could think of who helps a woman during pregnancy. The questions on social support were more specific, such as who can help if a pregnant woman does not have money for clothes, bills, or food and who is the most important person to a pregnant woman. A literature review and ethnographic participant observation in the communities led to the inclusion of additional questions about specific beliefs about the potential harmfulness of certain phenomena such as coraje (anger), envidia (jealousy), eclipses, nervios (nerves), susto (fright), and preocupacion (worry, anxiety). An example of these types of questions is “Does anger affect pregnancy?” If a participant answered in the affirmative, then she would be asked “Can anything be done to reverse the effects of the anger?” Each interview lasted approximately 20-45 minutes. See Appendix A for a copy of the interview schedule.

Freelist: Sampling and Recruitment

Metropolitan Zone of Guadalajara (ZMG)

Purposive and random sampling strategies were used to select areas of similar socioeconomic characteristics from which to interview. For CDA, it is recommended to have at least 10-13 informants for data elicitation (Weller and Romney 1988). The Instituto Nacional de Estadistica Geografica e Informatica (INEGI), or the National Institute of Geographic and Informative Statistics, produces maps of the Basic Economic Geographic Areas (AGEB) of
Mexico. An AGEB represents an area that INEGI has designated as occupying a specific socioeconomic stratum, defined by INEGI based on levels of lifestyle and wellbeing. AGEBs can be viewed as representing a social class and these terms will be used interchangeably throughout this dissertation so that, for instance, upper class and upper AGEB are synonymous. AGEBs are designated as either urban or rural by INEGI according to population and territory. All cabeceras are classified as an urban AGEB regardless of population. In addition, a geographical area with a population of at least 2500 inside 1-50 city blocks or blocks of houses (manzanas) is classified as urban. The rest of the country is divided into rural AGEBs that are territorial extensions with at least 10,000 hectares and 2500 or more people. A copy of an AGEB map of the ZMG from 1990, on loan from the Unit of Social, Epidemiologic, and Health Services Investigation at the Centro Medico de Occidente in Guadalajara, was used to locate AGEBs from which to sample. The Centro Medico is a large hospital within the IMSS system serving the ZMG, as well as the state. In the map used to derive the sampling areas, INEGI divided the socioeconomy into four major socioeconomic classes, with eight subdivisions. These subdivisions are as follows: Alta Superior (upper upper class), Alta Inferior (lower upper class), Media Superior (upper middle class), Media Inferior (lower middle class), Baja Superior (upper lower class), Baja Inferior (lower lower class), Marginada Superior (upper marginal class), and Marginada Inferior (lower marginal class). Current AGEB classifications from the 2004 census by INEGI were not accessed until after Phase I had been completed, therefore, the sampling design is based on the 1990 map that was available at the time. No AGEB maps were obtained for Ciudad Guzmán, the cabeceras or the ranchitos prior to sampling. All social classifications for these areas are based on the 2004 census data and were determined after conducting the
interviews. In order to have legitimate comparisons within the entire sample, the 2004 social classifications from the ZMG are used in the data analysis.

Sampling for the eight socioeconomic strata was purposive. The upper class, both subdivisions, comprises the smallest percentage on the 1990 map of the population and thus, there are very few neighborhoods with these designations. Therefore, all AGEBs of the Alta Superior and Alta Inferior in the ZMG were counted and assigned a number. In total, there are 12 AGEBs of Alta Superior and 20 of Alta Inferior. Using a random numbers table (Bernard 2002:701-703), two AGEBs of each of the two Alta strata (Alta Superior and Alta Inferior) were selected from which to sample, for a total of two Alta Superior AGEBs and two Alta Inferior AGEBs.

The larger proportion of the Metropolitan Zone of Guadalajara, according to the 1990 AGEB map, is designated as belonging in the Media and Baja classes. Because these two classes comprise the majority of the AGEBs, a different method was used to randomly select two AGEBs from each of the four subdivisions. Taking the AGEB map, the Centro Medico (IMSS) was located on the map. It lies roughly in the center of the ZMG. Placing a ruler over the Centro Medico on the map, a horizontal and a vertical line were drawn (each representing approximately 15 kilometers) with the Centro Medico as the center point. A square was made around this cross containing approximately 225 km². Within this square each AGEB of Media Superior class was assigned a number, for a total of 16. Using the random numbers table again, two AGEBs from this category were randomly selected for sampling. This same method was used to select two AGEBs each from the classes Media Inferior, Baja Superior, and Baja Inferior. In the square, there are a total of 39 AGEBs of Media Inferior, eight of Baja Superior, and 21 of Baja Inferior.
Finally, the AGEBs of the Marginada class were selected from the city of Tonalá, a municipality in the ZMG. Most of the Marginada AGEBs are located in the outlying areas of the ZMG. Tonalá is one of those areas. Tonalá was chosen as the area from which to randomly select the Marginada AGEBs because, according to the Assistant Director of the midwifery program at the Centro Medico, Tonalá has a high number of midwife-attended births. Therefore, in order to include participants who had access to midwives, Tonalá was intentionally chosen as an area from which to randomly sample. For the selection of the AGEBs in Tonalá, each AGEB from the Marginada Superior class was numbered and then, using the random numbers table, two AGEBs were selected. The same procedure was used to select two AGEBs from the Marginada Inferior class. There are a total of 30 Marginada Superior and seven Marginado Inferior AGEBs in Tonalá.

A total of 16 AGEBs were selected to equally represent all socioeconomic strata recognized by INEGI in 1990. Once these 16 AGEBs had been identified, the AGEB map was then compared to a tourist guide and map of the ZMG produced by Blue Map (Vazquez 2006). The tourist map displays the colonias, or neighborhoods, and streets. The selected AGEBs were transposed to, and highlighted on, the tourist map to locate the corresponding streets and neighborhoods to facilitate locating and sampling of the areas.

After a sufficient sample of AGEBs had been identified, participant sampling began. A spatial-temporal sampling frame was used to identify locations and time slots within each AGEB. The spatial-temporal sampling frame randomizes the AGEBs within a purposive grouping and randomizes times for selecting participants. This method ensures a sample that includes women who are out of their homes at different times of the day. The maximum goal was to obtain three interviews from each subclass, with at least one occurring in the morning and
one in the afternoon. Thus, a disproportionate stratified random sample was generated. A list of all 16 AGEBs was produced and ordered from Marginada Inferior to Alta Superior. Starting with time-slot “morning” and one interview (alternating 1 and 2), each AGEB was assigned a time and number of interviews to obtain, such that Marginado Inferior AGEB 1 was assigned time “morning” and one interview; Marginado Inferior AGEB 2 was assigned time “afternoon” and two interviews to obtain. Thus, a possibility of three interviews would be obtained at various times of the day from Marginado Inferior. The list is shown in Table 7.1.

<table>
<thead>
<tr>
<th>AGEB</th>
<th>TIME SLOT</th>
<th># OF INTERVIEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaI1</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>MaI2</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>MaS1</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>MaS2</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>BaI1</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>BaI2</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>BaS1</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>BaS2</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>MeI1</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>MeI2</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>MeS1</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>MeS2</td>
<td>M</td>
<td>2</td>
</tr>
<tr>
<td>AiI1</td>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>AiI2</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>AiS1</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>AiS2</td>
<td>M</td>
<td>2</td>
</tr>
</tbody>
</table>

To further randomize the sample, each AGEB/time slot was assigned a day of the week. To do this, each AGEB/time slot was written onto a piece of paper and shuffled. Beginning with Monday morning, a piece of paper was picked from the pile and that AGEB/time slot was written into the Monday morning day slot. The method was continued until all mornings, then all afternoons, had been filled from Monday to Friday, and then the shuffle started once again with Monday morning. This sampling scheme generates a possibility of completing 24
interviews, a larger number than is needed. As stated before, 10-13 participants is a sufficient number to be included in cultural domain analysis (Weller and Romney 1988), however it was hoped that this study would include a larger number of participants from Guadalajara given the vastness of the area, economy and population.

To obtain an interview, the AGEB was visited at the specified time of day. Sampling was opportunistic. All interviews were conducted by me. Using the map, the AGEB was entered on the first street on the approaching side. After walking approximately two blocks deep, the first woman in sight was approached, the research was explained. If she consented, an interview was conducted in a place comfortable for the participant. In Guadalajara, many women are out on the street on an errand, and some with small children. These women were less likely to give consent for an interview simply because it was not convenient. Women who were in front of their houses sweeping, sitting, or talking with other people were more likely to consent to an interview as they were not occupied at the time. The lowest response rate (approximately 40%) came from the ZMG. In all other areas almost no one declined to participate. Reasons for the higher number of declines may be linked to an urban sense of distrust. People from other areas of Jalisco commonly discussed the fast-paced life and distrust of Guadalajarans. Whether or not this is simply anecdotal with no basis, certainly I was viewed with less trust when I introduced myself and the research in the ZMG than anywhere else. In some areas, if there were no women to be seen on the streets, I began knocking on every third door. Again, people wanted to know who I worked for, where I was from, and what I was doing. Several women suggested wearing identifying credentials. Common excuses given for not participating included being too busy and having dinner. One woman even insisted she was too old (en la tercera edad) to participate.
Once the sampling and interviews had begun, it became apparent that this sampling strategy was very time consuming in a metropolitan zone, largely due to transportation obstacles. For example, to reach one of the Alta AGEBs on the northwest end of the ZMG from a Marginada AGEB in Tonalá (on the east end) could take up to one hour, thus attempting to go to three different AGEBs in one day was problematic. Each interview took 30 minutes on average. Furthermore, the lunch hour in Mexico is from 2:00-4:00 or 2:00-5:00 p.m. Most businesses close for these hours and people are in their homes eating their most substantial meal of the day. Even in Guadalajara, outside of the downtown business district, this tradition is upheld. After several failed attempts, and after speaking with residents and key informants, it was decided not to try to sample during these hours. Most schools begin at 8:00 or 9:00 in the morning, the times vary according to the age of the child and the type of school (e.g., private or public). Therefore, mothers are usually available in the mornings, and can also be interviewed in the afternoons, although it is more difficult to complete an interview with children around. Thus, sampling could only take place from 9:00-2:00 and from 4:00 or 5:00 to 7:00 or 8:00 in the evening. Each AGEB was visited only once, for several hours, whether an interview was obtained or not.

A total of 16 interviews were conducted in the Metropolitan Zone of Guadalajara, specifically in the cities of Guadalajara and Tonalá. The AGEB socioeconomic designations of 2004 are very different from the 1990 classification that was used for the sampling design. Table 7.2 shows a comparison of 1990 and 2004 socioeconomic representation in the sample. Again, the 1990 map was used during the sampling and interview process of Phase I, but the 2004 social classifications are used in the data analysis for consistency with the rest of the sample from other areas. All but one interview were conducted inside the participant’s home, or in front of the home. One interview was conducted in a park.
Table 7.2. Social class characteristics of the ZMG sample, adapted from 1990 and 2004 census data (INEGI 2009).

<table>
<thead>
<tr>
<th></th>
<th>ZMG Sample</th>
<th>1990 (%)</th>
<th>2004 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alta(Upper)</td>
<td></td>
<td>6.25</td>
<td>56.25</td>
</tr>
<tr>
<td>Media (Middle)</td>
<td></td>
<td>12.50</td>
<td>37.50</td>
</tr>
<tr>
<td>Baja (Lower)</td>
<td></td>
<td>37.50</td>
<td>6.25</td>
</tr>
<tr>
<td>Marginado (Marginal)</td>
<td></td>
<td>43.75</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Ciudad Guzmán**

In Ciudad Guzmán, also known as Zapotlán El Grande, no map of the AGEBs could be found before the start of the investigation. All social class designations were determined after the interviews had taken place. They are based on the 2004 census data which is divided into Alta, Media and Baja only and does not have a Marginado category. A map of the colonias, or neighborhoods, of Ciudad Guzmán (Limón 2006) was purchased from a papelería, a store that sells paper goods and office and school supplies. To determine which colonias belonged to which socioeconomic strata, five residents of Ciudad Guzmán were asked to list all colonias they could think of that belonged to the Alta, Media, and Baja strata. The lists were compared and the three colonias from each stratum appearing with the most frequency were selected for sampling, giving a total of nine colonias. Using the spatial-temporal sampling frame described in the sampling scheme for the ZMG, day and time slots were assigned to each of the nine colonias until each colonia had two slots for interviews. This sampling scheme allowed for a potential total of 18 interviews, six from each socioeconomic stratum.
Following the same strategy employed in Guadalajara, once a colonia was selected and randomly assigned a day and time slot, opportunistic interviewing was carried out. The colonia was entered on the side from which it was approached. After walking into the colonia at least two blocks, the first woman seen on the streets was approached and, if she gave her consent, an interview was conducted in a place of the participant’s choice. The interview location was almost always in a home. Ciudad Guzmán is a semi-urban city, however, due, in part, to the migratory influx of people from surrounding rural areas in the past two decades, the atmosphere of Ciudad Guzmán continues to maintain more rural customs and attitudes than in a larger city such as Guadalajara. A more rural atmosphere influences the sampling in several ways. First, randomizing days and times of day appeared to not have an impact on who was available for interviews. Many women in Ciudad Guzmán do not work and, therefore, are home most of the day. The school hours had a greater impact on interview availability, and more participants were solicited in the morning hours (i.e., before 2:00 p.m.) than in the afternoon hours. The lunch hour, 2:00-5:00 p.m., had the greatest impact on interview availability as everyone goes home or out to eat during these hours. To work during these hours, and ask for interviews, is offensive and rude to many people. Therefore, any interviews obtained in the afternoon took place after 5:00 p.m.

A total of 12 interviews were conducted in Ciudad Guzmán: three in Alta, two in Media, and seven in Baja. All interviews were conducted inside or in front of the participant’s homes. Two limitations to achieving a true stratified sample in Guzmán should be noted. The first is that the classifications used for sampling are not government classifications, but anecdotal classifications. Aside from the colonias where the very rich or the very poor live, it is difficult to classify most of the colonias as Alta, Media, or Baja because of the diversity of each colonia.
Government criteria includes amenities such as running water, walls of durable materials, a floor not made of dirt, roofs of durable materials, electricity, et cetera. Within the city limits of Ciudad Guzmán, nearly all residents have these amenities. However, the criteria of the government appear to differ from the opinions of the residents of Ciudad Guzmán. Furthermore, in most colonias, there is an obvious mixture of socioeconomic strata.

Table 7.3. Informant classification compared to government social class categorization of sample and government population estimates in Ciudad Guzmán.

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Sample (%) (by informant categories)</th>
<th>Sample (%) (by 2004 INEGI AGEB classifications)</th>
<th>Ciudad Guzmán (%) (INEGI 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alta (Upper)</td>
<td>25.00</td>
<td>66.67</td>
<td>82.71</td>
</tr>
<tr>
<td>Media (Middle)</td>
<td>16.67</td>
<td>33.33</td>
<td>16.18</td>
</tr>
<tr>
<td>Baja (Lower)</td>
<td>58.33</td>
<td>0.00</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Table 7.3 shows a comparison between informant classifications of the sample and 2004 INEGI classifications of both the sample and the overall socioeconomic of Ciudad Guzmán. The first column shows sample stratification according to informants, the second column shows sample stratification according to a current AGEB map located post-sampling (www.inegi.org). Given that INEGI classifies 82.71 percent of the population in the Alta stratum, the majority of the sample of participants in this study also occupies the Alta stratum. What residents of Ciudad Guzmán consider lower class is an opinion resulting from comparison of visible disparities within the city, including differences in lifestyle. For example, in the neighborhoods listed as Alta by residents, the houses are very large; many heads of household are large business owners, doctors, and other employees in the professional sector; most families have at least one car; and many homes employ domestic workers. In the areas considered of lower class, most households do not have a car; many people work in construction or agriculture and do not have steady
employment; and many households have extended family members residing under one roof. The neighborhoods in Ciudad Guzmán listed as lower class by informants and exhibiting the most extreme disparities (e.g., houses made of scrap materials) are in AGEBs classified as Media by INEGI in 2004 (INEGI 2009). Almost all homes in Ciudad Guzmán have running water, electricity, floors not made of dirt, have at least one employed household member, drainage, et cetera. and, therefore, are not classified as Baja by INEGI. However, within the socioeconomy of Ciudad Guzmán, there are clear divisions and disparities, and many citizens agree on where the rich and the poor reside. In the colonias that are considered lower class by residents of Ciudad Guzmán, a small number of houses are found with dirt floors, partial roofs, and extreme overcrowding. Thus, the classifications by INEGI represent an average rating, or an aggregate of the scores of each resident in the AGEB according to the 27 classification criteria.

**Rural Cabeceras and Ranchitos**

Participants in the rural category were recruited from a total of four cabeceras and three ranchitos. Originally, only rural cabeceras were to be included in the study, however, after visiting these towns and conducting the freelist interviews, it became clear that the research design needed to expand to include ranchitos as well. The difference lies in available resources, including health care, services, employment, and food, among others. These differences indicate potential variation in models of pregnancy and prenatal care given the lack of available biomedical health care in some of the ranchitos, especially locations that are a longer distance from a cabecera. Therefore, the research design was altered to include ranchitos during the implementation of Phase I.

Sampling in the cabeceras of Zapotiltic and Zapotitlán de Vadillo was opportunistic. In both places, a map was obtained from a local papelería. In each case, the map was a one-page
photocopy of a hand-drawn and typed map and most likely produced by the local government or House of Culture. The map was used as a guide for orientation and location, but not for sampling. Sampling was opportunistic and simple. In both places, I walked from the main plaza several blocks deep into a residential area and approached the first woman seen. To randomize the sample, after one interview was achieved on a street, that street was no longer considered for sampling and I walked two to three streets away to find another participant, always heading away from the city center. Seven interviews each were carried out in Zapotiltic and Zapotitlán de Vadillo.

Interviews with participants from Pihuamo, El Tule, San Juan Espanática, and Tecalitlán were conducted at a bell pepper farm and processing plant near Tuxpan. The plant hires people from all over the region and brings them by bus each morning to work, and then takes them home in the evenings. The owner of the plant learned of the investigation and the need for participants from Pihuamo and offered to recruit as many participants as needed from his plant and to allow them to have an interview while at work. Because Pihuamo is difficult to reach for the day, it was agreed that interviews would take place at the plant. Each participant was asked by her employer if she would like to participate and then sent to the area set up for interviews. The study was then explained to her in detail and, if consent was again given, the interview was conducted on the spot. Each participant was informed that the study was not related to her job and that she would not be penalized at work for participating or not participating, and that no one but the investigator, including her employer, would see her responses. A total of seven interviews were conducted at the pepper plant.

Two ranchitos, El Guayabo in the county of Pihuamo, and San Isidro in the county of Tecalitlán were visited for freelists as well. In El Guayabo, a car was rented to facilitate round-
trip travel in one day. The car was parked at the town square and the first woman seen was approached and interviewed. No more participants were recruited that day because of a chance opportunity to spend the day talking about pregnancy and childbirth with the local doctor. In San Isidro, three interviews were conducted. The women were approached at a community gathering and asked if they would like to participate. Two women were interviewed at the gathering, separately, and the third was interviewed in her home after the gathering.

INEGI AGEB classification of the municipios, or counties, of Pihuamo, Zapotiltic, Zapotitlán de Vadillo, Tecalitlán, and Tuxpán is seen in Table 7.4. Many times, the county seat has the same name as the municipio. AGEB data on the towns with the same name as the municipios was not available. The ranchitos of El Tule, San Isidro, San Juan Espanatíca, and El Guayabo are all in rural AGEBs of these counties. The number of rural and urban AGEBs and the population of each county are also given.

<table>
<thead>
<tr>
<th>Table 7.4. 2004 INEGI AGEB classifications for rural sample and AGEB classification and population of each municipio (INEGI 2009).</th>
</tr>
</thead>
</table>
| Sample | Pihuamo (El Guayabo) (INEGI) | Zapotiltic (INEGI) | Zapotitlán de Vadillo (INEGI) | Tecalitlán (San Isidro) (INEGI) | Tuxpán (San Juan Espanatíca and El Tule) (INEGI) (%)
| Alta (Upper) | 0.0 | 0.0 | 16.2 | 0.0 | 10.4 | 23.9 |
| Media (Middle) | 72.0 | 49.6 | 74.8 | 43.2 | 62.9 | 57.9 |
| Baja (Lower) | 28.0 | 50.4 | 9.0 | 56.8 | 26.7 | 18.2 |
| Population | n=25 | 27,290 | 6,345 | 16,042 | 32,462 | 11,681 |

**Freelist: Data Analysis**

Freelist data was analyzed using Anthropac 4.0. The lists were then reduced according to frequency, salience, and cultural relativity. Similar terms were recoded into one thematic term,
for example, “folic acid,” “vitamin C,” “iron,” and “take vitamins,” were put into the term “take vitamins.” In the interview schedule, participants were asked to list things good for pregnancy and things bad for pregnancy. These two lists were integrated into one list of things having to do with pregnancy. Similar items were recoded into one item. For example, “take vitamins” in the good for pregnancy list, and “if you don’t take vitamins” from the bad for pregnancy list, were compressed into the term “take vitamins.” The reduced and recoded lists were then written onto index cards to be used in the pile sort and rating task. Data from non-freelist questions in the interview schedule were put into an SPSS 11.0 data file and analyzed using t-tests, chi-square, ANOVA and regression analyses to test for relationships among participant responses and the independent variables site, age, parity, and AGEB classification (where available).

**Pile Sort and Rating Task: Interview Schedule**

The second interview in Phase I included unconstrained and constrained pile sorts and a 4-point rating task of things pertaining to pregnancy. Twenty-three participants were recruited for pile sorts and a rating task. Both pile sorts and the rating task were performed with the set of 38 terms reduced from the freelist exercise. Each term was written on a card, accompanied by a photo, numbered on the back, and laminated. The use of a picture was a decision based on the possibility of illiteracy in both older women and women living in rural areas. Each card was assigned an identifying number written in permanent marker on the back and all cards were laminated. The number was used for recording purposes. The pile sort and rating task were accomplished consecutively. Participants were given the cards of things related to pregnancy and asked to sort the cards in an unconstrained sort. The participant was then asked to sort the cards in a constrained sort into categories of good and bad for pregnancy. To achieve a 4-point scale in the rating task, the participant was then asked to subdivide the two categories of good
and bad into four categories: always good/necessary, sometimes good but not necessary, sometimes bad/can be bad, always bad. The fourth sorting task was done with the food cards. Each participant was handed the cards with foods and asked to sort them in a constrained sort of good and bad for pregnancy. Responses to each task were recorded in a notebook using the numbers on the back of the cards. Each interview lasted approximately 15-30 minutes.

**Pile Sort and Rating Task: Sampling and Recruitment**

Sampling for the pile sort and rating task followed the sampling strategy described above in the freelist task, however, a smaller number of participants were recruited for the pile sort and rating task. The pile sort/rating sample is not as stratified as the freelist sample. Several reasons contributed to the final sample makeup, including transportation to the site and access and availability of participants. One participant was interviewed in Guadalajara in an Alta AGEB. In Ciudad Guzmán, four participants were interviewed in an Alta AGEB and four participants were interviewed in a Media AGEB. Six participants total were interviewed in the cabeceras of Zapotiltic and Zapotitlán de Vadillo. Eight participants were interviewed in the ranchito of El Guayabo in the municipio of Pihuamo. A total of 23 interviews were completed for the pile sort and rating task.

**Pile Sort and Consensus Analysis**

Responses from the pile sorts and rating task were entered into Anthropac 4.0 (Borgatti 1996a). Multidimensional scaling, cluster analysis and PROFIT analysis were used to analyze the data from the pile sorts. Rating task data was analyzed using the consensus function in Anthropac. The cultural consensus analysis used in this dissertation is an informal consensus model. It is a principle components analysis of people that works well with rating task data (Weller 2007). The analysis specifies a single-factor, single-group model and the participants’s
factor loadings correlate to their correspondence to the shared group of beliefs (Weller 2007). Achieving consensus is based on the one culture theory that there is sufficient sharing of knowledge in a given domain to achieve a cultural model (Romney et al. 1986). For this to happen, the ratio of the eigenvalue of the first factor to the second factor must be at least 3 to 1 (Weller 2007). Consensus analysis generates a cultural competence score for each individual to assess their knowledge and agreement with the shared cultural model of a good pregnancy. The cultural competence score is a Pearson correlation coefficient of each participant with the overall model. In other words, it provides a measure of how well that participant corresponds to the group (Weller 2007).

Consensus analysis produces an answer key that gives the correct response for whether an item is good or bad for pregnancy. The 4-point rating task prompted participants to sort cards into piles of always good/necessary (3), good but not necessary (2), sometimes bad (1), always bad/never do (0). For example, if an item was rated as always good by every participant, the consensus analysis assigns that item a 3.0 in the answer key. PROFIT (PROperty FITting) analysis, like cluster analysis, is a way to analyze proximities. PROFIT tests underlying dimensions. It “is a method of testing hypotheses about the attributes that influence people's judgement of the similarities among a set of items” (Borgatti 1996b:36). In Anthropac 4.0 (Borgatti 1996a), the answer key from cultural consensus analysis is entered as the attributes in the PROFIT function. The coordinates from MDS are transposed and entered as the coordinates in PROFIT. PROFIT analysis produces cosines for the x-axis and y-axis that are used to draw an arrow (through 0,0) on the MDS map. An r-square coefficient is also produced that tells how strong the fit is for the PROFIT line to the values of the attributes. In other words, the PROFIT analysis can test a hypothesis about why items fall where they do on the MDS map. This tells us
how well the consensus analysis results from the rating task (attribute) fit with the dimensions identified through MDS and cluster analysis.

**Phase II: Cultural Consonance Analysis and Stress in a Pregnant Sample**

In Phase II, pregnant women of more than 20 weeks gestation (a small number of participants \[n=14\] were interviewed before 20 weeks gestation) were interviewed in a variety of settings. Sampling was both purposive and opportunistic. The research was designed to include women who seek prenatal care and advice from biomedical doctors and traditional midwives, therefore, participants were recruited through both types of caregivers. The purpose of including a second phase was to determine 1) if the cultural model identified in Phase I is supported by a cohort of pregnant women; 2) if cultural consonance, or approximation of the model, is correlated with competence in the model; and 3) if cultural consonance is correlated with psychosocial and physiological stress.

For Phase II, four sites were delineated as separate categories. This decision was made based on results and observations from Phase I indicating a variety of differences between rural cabeceras and ranchitos. One difference is that the ranchitos included in the investigation, with the exception of Copala, do not have a Health Center, but rather a Rural Health House. The Rural Health House is staffed with an auxiliary, or person from the community who is trained in emergency medical care and can dispense basic medicines. A doctor visits the Rural Health Houses every two weeks. In some places the doctor only visits once a month. Health care in ranchitos with a Rural Health House tends to rely more on traditional elements than in a town with a Health Center. Furthermore, most of the cabeceras have private doctors, usually practicing family medicine, offering another biomedical alternative. Thus, for the purpose of
widening the research design to account for potential variation, the four sites in Phase II are: urban, semi-urban, rural cabecera, and ranchito.

Each participant was interviewed once during her pregnancy. The interview schedule includes a 30-item 4-point agree/disagree section for the components of the cultural model identified in the cultural domain analysis to be entered into consensus analysis in Anthropac; Cohen’s 10-item Perceived Stress Scale (PSS); a 10-item Pregnancy-Related Anxiety Scale (PRA); 31 cultural consonance questions for determining individual approximation of behavior to the cultural model; and questions about stressful life events, sociodemographic characteristics, risk factors, household elements, work inside and outside of the home, pregnancy history, social support, social resources, diet, substance abuse, and a symptom checklist (see Appendix C). Additionally, a blood sample was taken through finger prick for whole dried blood spot immunoassay of Epstein-Barr virus antibodies and C-reactive protein as a measure of physiological stress. The cultural consonance questions were developed into a cultural consonance in a good pregnancy (CCGP) score for each participant (see following section for details on derivation of the measure). The interview, including the finger prick, lasted anywhere from 30 minutes to one and a half hours, with the median time about 40 minutes. Length of interview depended on the desire and willingness of the participant to discuss the questions and answers.

**Phase II: Measures and Instruments**

Socioeconomic status (SES) is measured with a composite variable created using principal components analysis. Six variables were put into a principal components analysis to derive an SES score for each individual. The variables included are consumer goods score, basic geographic and economic area classification (AGEB), household income, education of
participant, occupation of husband, and number of bedrooms in the house. All variables have an ordinal 0-3 metric going in the same direction. Five other variables were originally included in an attempt to derive a useful SES measure: piped water, electricity, income per adult in the household, occupation of the participant, and remittances from the United States. However, these five variables were highly correlated with other variables, producing four factors with eigenvalues over 1.0. All variables with less than a 0.5 in the component matrix were excluded from the final analysis.

A consumer goods score was generated for each participant according to whether the household owned the following items: TV, DVD, radio, cable, computer, car, motorcycle/scooter/moped. Because fifty percent of the participants (n=44) live in a household with more than one television, a categorical variable was created to represent if the household has 0, 1, or 2 or more televisions (0=0, 1=1, 2+=2). The variable to own a car also has 3 values: 0=no, 1=yes owned by other family members, 2=yes owned by the husband or wife. The remaining variables are dichotomous (0=no, 1=yes). The consumer goods score, with a range of 0-9, was then recoded into a categorical variable with four values.

For the purpose of generating a socioeconomic status score in this research, lower class is divided into lower urban and lower rural (0=lower city, 1=lower rural, 2=middle, 3=upper). Participants living in a lower class AGEB in a rural area are given a higher value because, in general, rural residents have additional resources that are not available to the urban poor, specifically livestock, plant foods, and reciprocal exchange. AGEB is referred to as social class in the analysis and discussion of the data, however, it is distinct from the SES measure. A participant’s social class is a reflection of the area in which she lives and represents the aggregate social class of her area and not her individual and household socioeconomic status.
Household income was counted as income per adult in the household. Each participant was asked her household income every two weeks. Instead of asking for a specific number, the participant chose from five categories: 0-1500, 1550-3000, 3050-5000, more than 5050 (pesos). The median of the specified income category was divided by the number of adults living in the house. For example, if a participant specified 0-1500 pesos every two weeks and three adults live in her household, income per adult is 750 divided by three, or 250. Education of participant is measured in categories: 0-6 years (primary school), 7-9 years (secondary school), 10-12 years (preparatory school), more than 12 years (college or technical school). Occupation of husband is a categorical variable of not employed, campesino/construction (not steady), factory/industry (steady), and professional/corporate/business owner. Number of bedrooms is simply the number of bedrooms in each household.

Social support is measured both as social interaction and perceived social support and derived from questions of social support in the interview. Perceived social support is represented as a score derived from responses to eight situations in which emotional or material resources might be needed. Each situation has six possible sources of support giving a score range from 0-48 (Table 7.5). The scale was found to have sufficient internal validity (Cronbach’s $\alpha = .77$). Based on the importance of sources of support identified through the freelistig technique, social support was further subdivided into family support and non-family support in multivariate analyses. This was done in an effort to account for the meaningfulness of support in addition to the number of sources.
Table 7.5. Perceived Social Support

<table>
<thead>
<tr>
<th>Sources</th>
<th>Situations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relatives</td>
<td>needing a loan, having a debt in the household</td>
</tr>
<tr>
<td>Friends</td>
<td>an illness in the household</td>
</tr>
<tr>
<td>Neighbors</td>
<td>who do you talk to when you are nervous or upset</td>
</tr>
<tr>
<td>Compadres</td>
<td>who do you talk to when you need advice</td>
</tr>
<tr>
<td>DIF/Government</td>
<td>who do you talk to if there are inconveniences or disputes at home</td>
</tr>
<tr>
<td>Other source</td>
<td>who do you talk to when you are worried about the pregnancy</td>
</tr>
<tr>
<td></td>
<td>who can help you if you need money for food, clothes, or bills</td>
</tr>
</tbody>
</table>

Social interaction is a measure derived from questions about geographic proximity to kin, frequency of contact with female relatives, and coresidence (Table 7.6). Each of these categories has a 0-3 answer range, giving a total score range of 0-15.

Table 7.6. Social Interaction

<table>
<thead>
<tr>
<th>Points</th>
<th>Geographic Proximity to Kin Ties</th>
<th>Frequency of contact with</th>
<th>Coresidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>lives in town with no relatives of own or her husband</td>
<td>less than once a month</td>
<td>no</td>
</tr>
<tr>
<td>1</td>
<td>lives patrilocally in town with inlaws/hero’s relatives</td>
<td>2-3 times a month</td>
<td>(blank)</td>
</tr>
<tr>
<td>2</td>
<td>lives in the same town with parents/her relatives</td>
<td>once a week</td>
<td>lives with husband’s kin</td>
</tr>
<tr>
<td>3</td>
<td>lives in same town with both her relatives and his relatives</td>
<td>2-3 times a week/daily (these are combined from original metric)</td>
<td>lives with own kin</td>
</tr>
</tbody>
</table>

Eight questions about stressful life events (Holmes and Rahe 1967) took dichotomous yes/no answers, yielding a possible score range of 0-8. The questions covered death of someone emotionally close, a relationship that ended, imprisonment of the participant or someone emotionally close, illness or injury to the participant or someone emotionally close, fired or let go from a job for either the participant or someone emotionally close, quit a job for either the participant or someone emotionally close, a financial change for the household resulting in lower income, and an altercation or problems with the family.
Psychosocial stress is measured with Cohen’s 10-item Perceived Stress Scale (PSS) (Cohen and Williamson 1988) and a Pregnancy-related Anxiety scale (PRA) (Wadhwa et al. 1993; Rini et al. 1999), also a 10-point scale. Both the PSS and PRA employed a 5-point Likert scale (0-4), thus each of the measures allows for a possible score of 40 for each individual. The PSS used in this dissertation (PSS-10) was adapted from a previously validated Spanish version tested with a group of Mexican university students (Gonzalez and Landero 2007). Gonzalez and Landero (2007) performed an exploratory factor analysis on the 14-item PSS, translated into Spanish, and found corroboration of the two-factor structure identified by Cohen and Williamson (1988). Cohen and Williamson (1988) indicated that the distinction of two factors is irrelevant and only one score should be measured. Using the translated, validated 14-item PSS, the scale was reduced to the 10-item PSS. This version underwent exploratory factor analysis in English and two factors were identified: perceived helplessness and perceived self-efficacy (Robert et al. 2006). Internal validity was also found to be sufficient (Robert et al. 2006). The Spanish version used in this dissertation was tested and found to have sufficient internal validity as well (Cronbach’s α = .76).

The PRA used in this dissertation research was adapted from Rini et al. (1999), who adapted and expanded it from Wadhwa et al. (1993). They conducted an exploratory factor analysis and found that in both Spanish and English the scores were represented by one factor with good internal reliability (Cronbach’s α = .80). The English version found in Rini et al. (1999) was translated into Spanish by this investigator and checked for salience and grammar by two key informants and a Mexican ESL (English as a Second Language) teacher. Internal validity of the version used in this dissertation was found to be high (Cronbach’s α = .79). For
the physiological stress measure (EBV), values generated from lab analysis were normalized by
taking the square root.

The 4-point data from the rating task of 30 items were entered into the cultural consensus
analysis function in Anthropac to determine if there is one shared cultural model among the
participants in Phase II. An answer key of correct answers for whether an item is good or bad for
pregnancy was produced. The 4-point agree/disagree rating offered the following options:
strongly disagree (0), disagree (1), agree (2), strongly agree (3). If an item has 100 percent
strong agreement, the answer key would assign that item a 3.0.

To generate a cultural consonance score for each participant, points were assigned for
appropriate prenatal behavior (i.e., approximating the model in behavior). Table 7.7 articulates
how each item was assessed in the cultural consonance measure. The consonance measure
contains one more item than the consensus rating task in Phase II. The rating task used a subset
of 30 items from the original 38 that were used in the pile sort and rating task in Phase I for the
sake of simplicity and time. Because the original 38 had very high agreement in consensus
analysis in Phase I and would likely achieve high agreement in Phase II, I decided to include
three items in the consonance analysis that were not in the 30-item rating task of Phase II.
Additionally, two of the 30 items from the CCM were not included in the consonance measure,
resulting in a total of 31 consonance items. A dichotomous yes/no variable was created for the
item that reflected whether or not the participant had behaved appropriately according to answer
key provided by Anthropac. Each item was weighted based on how strong the agreement was in
the answer key produced by cultural consensus analysis. For the tallying of cultural consonance,
any item with a score of 0 to ≤1.0 in the answer key received a weight of 1, >1.0 and ≤2.0
received a weight of 2, and >2.0 and ≤3.0 received a weight of 3. For example, participants
strongly agree that attending monthly prenatal appointments is good during pregnancy. If the participant reported attending monthly prenatal appointments then she received three points toward her cultural consonance score. Cultural consonance scores were derived by summing the scores for appropriate behavior of each item in the cultural model for which data was obtained (31 items; Cronbach’s $\alpha = .65$; see Table 7.7). The consonance measure has a possible range of 0-61 and an actual range of 0-58.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Variable</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have not eaten acidic foods</td>
<td>0=Monthly/2-3 x month/weekly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Never/almost never</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>0=No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Yes</td>
</tr>
<tr>
<td></td>
<td>Visited a midwife</td>
<td>0=No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Yes</td>
</tr>
<tr>
<td></td>
<td>Have not worked too much</td>
<td>0=29-56 hours per week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=0-28 hours per week</td>
</tr>
<tr>
<td></td>
<td>Received a sobada/prenatal massage</td>
<td>0=No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Yes</td>
</tr>
<tr>
<td></td>
<td>Have not worried too much</td>
<td>0=Some/a lot/a whole lot on question #3 in the pregnancy-related anxiety scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Not at all/a little on question #3 in the pregnancy-related anxiety scale</td>
</tr>
<tr>
<td></td>
<td>Protected for eclipses</td>
<td>0=No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Yes</td>
</tr>
<tr>
<td></td>
<td>Regulate body temperature</td>
<td>0=Never/almost never</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Sometimes/often/very often</td>
</tr>
<tr>
<td></td>
<td>Have not taken medicines</td>
<td>0=Have taken medicines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Have not taken medicines</td>
</tr>
<tr>
<td></td>
<td>Have not eaten cold (temperature) foods</td>
<td>0=Monthly/2-3 x month/weekly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1=Never/almost never</td>
</tr>
<tr>
<td>2</td>
<td>Have a partner</td>
<td>0=No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2=Yes</td>
</tr>
<tr>
<td></td>
<td>Have support from partner</td>
<td>0=Never/almost never</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2=Sometimes/almost always/always</td>
</tr>
<tr>
<td></td>
<td>Have not been stressed</td>
<td>0=Sometimes/often/very often on question #3 in the perceived stress scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2=Never/almost never on question #3 in the perceived stress scale</td>
</tr>
<tr>
<td><strong>Variable</strong></td>
<td><strong>0 =</strong> Never</td>
<td><strong>2 =</strong> 1-5 times a day</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Rest</td>
<td>0 = Never</td>
<td>2 = 1-5 times a day</td>
</tr>
<tr>
<td>Have economic security</td>
<td>0 = Self-reported no</td>
<td>2 = Self-reported yes</td>
</tr>
<tr>
<td>Exercise regularly</td>
<td>0 = Once a week or less</td>
<td>2 = 2 or more times a week</td>
</tr>
<tr>
<td>Have not been angry</td>
<td>0 = Sometimes/often/very often</td>
<td>2 = Never/almost never</td>
</tr>
<tr>
<td>Have family support</td>
<td>0 = 1-4 on perceived social support from kin</td>
<td>2 = 5-8 on perceived social support from kin</td>
</tr>
<tr>
<td>Have not been nervous</td>
<td>0 = Frightened often/very often</td>
<td>2 = Frightened never/almost never/sometimes</td>
</tr>
<tr>
<td>Have not had a susto</td>
<td>0 = Had a susto</td>
<td>2 = Have not had a susto</td>
</tr>
<tr>
<td>Have not lifted heavy items</td>
<td>0 = Sometimes/often/very often</td>
<td>2 = Never/almost never</td>
</tr>
<tr>
<td>Have not had an illness</td>
<td>0 = Have had an illness</td>
<td>2 = Have not had an illness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Type</strong></th>
<th><strong>0 =</strong></th>
<th><strong>2 =</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat well</td>
<td>0 = 3 or less major food groups in daily diet</td>
<td>3 = 4 major food groups in daily diet</td>
</tr>
<tr>
<td>Have not smoked</td>
<td>0 = Have smoked</td>
<td>3 = Have not smoked</td>
</tr>
<tr>
<td>Have not drunk alcohol</td>
<td>0 = Have drunk alcohol</td>
<td>3 = Have not drunk alcohol</td>
</tr>
<tr>
<td>Take prenatal vitamins</td>
<td>0 = No</td>
<td>3 = Yes</td>
</tr>
<tr>
<td>Have not received a blow/hit</td>
<td>0 = Have received a blow/hit</td>
<td>3 = Have not received a blow/hit</td>
</tr>
<tr>
<td>Do not have an alcoholic husband</td>
<td>0 = Have an alcoholic husband</td>
<td>3 = Do not have an alcoholic husband</td>
</tr>
<tr>
<td>Have attended monthly checkups with doctor</td>
<td>0 = No</td>
<td>3 = Yes</td>
</tr>
<tr>
<td>Sleep well</td>
<td>0 = Never/almost never</td>
<td>3 = Always/almost always/sometimes</td>
</tr>
<tr>
<td>Have been calm</td>
<td>0 = Never/almost never</td>
<td>3 = Always/almost always/sometimes</td>
</tr>
</tbody>
</table>

**Phase II: Sampling and Recruitment**

As in Phase I, each site, or site, was sampled with different methodological approaches, although all samples are purposive and opportunistic. The health care system of Mexico is multi-faceted, offering coverage in a variety of manners. The two primary providers of health care coverage of the participants in this study are the Ministry of Health and the Mexican
Institute of Social Insurance (IMSS). Several of the participants also sought additional care from private providers for which they pay out of pocket. The majority of participants with coverage through IMSS were recruited in the Hospital General de Zona No. 9 in Ciudad Guzmán, a clinic and hospital providing comprehensive care. Before interviewing patients in the IMSS clinic, a protocol of investigation in the accepted format of IMSS was submitted to the Local Committee of Investigation in Health in Guadalajara. Dr. Rafael Bustos Saldeña, Head of Education and Investigation in Health at the IMSS hospital in Ciudad Guzmán, oversaw the writing, revision, and submission of this protocol. Unfortunately, permission to interview in the Centro Medico de Occidente of IMSS in Guadalajara was still pending when I left the country and, therefore, no interviews were obtained from IMSS users in the ZMG.

The Ministry of Health’s (Secretaria de Salud) health care program, Seguro Popular (People’s Insurance), is available to the uninsured. Users pay a monthly fee for access to health care in the public clinics and hospitals. These clinics, called Centros de Salud, or Health Centers, are located in urban AGEBs, that is, locales with 2500 or more people, or locales that are cabeceras. The Regional Hospital in Ciudad Guzmán and the Old Civil Hospital and New Civil Hospital in Guadalajara are public hospitals under the jurisdiction of the Ministry of Health of Jalisco (SSJ). Permission was granted by the SSJ Region IV, to conduct interviews with the prenatal patients of the Health Centers and the hospitals. Dr. Dina Georgina Diaz Espinoza, Secretary of the Investigation Commission at the SSJ in Ciudad Guzmán oversaw the writing, revision, and submission of the protocol to the SSJ. The regional director and President of the Investigation Commission of Region IV, Dr. Miguel Angel Medina Gomez, approved the investigation and signed the appropriate forms. Additionally, the head of Obstetrics and Gynecology at the Regional Hospital in Ciudad Guzmán and the directors of each Health Center
of the cabeceras visited in this research signed permission forms to allow the interviews to be conducted with prenatal patients of the hospital and clinics. In Guadalajara, participants were interviewed in the New Civil Hospital in the prenatal clinic. Dr. Iliana Romo, head of the clinic, granted verbal permission for interviews to be conducted inside the clinic.

Verbal permission was given by the midwives of the South Region division of IMSS to visit in their home towns and ask the women in their care for an interview. Additionally, many of the midwives helped to recruit pregnant women they knew, but not under their care. The South Region is the area of Jalisco located below Guadalajara geographically. Verbal permission for the same purpose was also given by the midwives registered with the IMSS hospital in Tonalá. In ranchitos where there are no midwives, residents were asked if they knew any pregnant women in the area. Snowball sampling produced many of the participants in these cases.

**Metropolitan Zone of Guadalajara (ZMG)**

Participants were recruited from both Tonalá and Guadalajara in an effort to include patients, or users as they are called, of midwives and biomedical doctors. In Tonalá, all participants are residents of the neighborhood of Jauja. A list was obtained of the midwives registered and providing services for the IMSS hospital in Tonalá. The research assistant and I visited the supervisor of the midwives to present the research and solicit her help in contacting the other midwives. Although she did not have any users in her care at the time, she made phone calls to some of the other midwives to ask their permission to receive us for a visit. The midwife in Jauja, Doña Lancha gave her consent for a visit. After hearing the goal and procedures of the research, Doña Lancha agreed to help and recruited 14 pregnant women who were either in her care, or with whom she was acquainted. All interviews were done in her home and the birthing
clinic. The clinic is adjacent to the home and is furnished with several beds, emergency supplies, sterilized bedding, a bathroom and shower. Participants arrived at the house, were introduced to myself and the research assistant, and the project was explained to them. If consent was given, the interview was conducted. Not all of the participants were patients of Doña Lancha, and, therefore, not all were seeking midwifery care.

In the city of Guadalajara, all participants were interviewed at the Hospital Civil Nuevo, or New Civil Hospital. The clinic is located on the fifth floor of the hospital, reached by elevator, and contains a large waiting area with rows of connected plastic chairs, a bathroom, and a television. The waiting area faces the reception desk. All patients with appointments scheduled for that day must arrive at 8:00 a.m. and sign in at the desk. They are then called back up to the desk after a short wait and receive a ficha (small piece of paper) with their appointment time and the name of the doctor they are to see that day. When the number is called they are taken back to an exam room to see a doctor. There are nine doctors--some of them residents--and two nurses in the clinic, and 12 exam rooms situated along one hallway perpendicular to the reception desk. Determining which doctor the patient sees the day of her appointment is contingent on the scheduled procedures, tests, type of exam, and risk factors of the patient. The nurse with whom I spoke said that approximately 100 women come for their prenatal appointments each day, and that each doctor has a set number of patients he or she will have a consultation with for the day. While the patients wait for their ficha during the first 30 minutes to an hour of the visit, a nurse will call out for them to line up to have their weight and blood pressure measured. While we interviewed in the clinic, the first patient was called back to an exam room at approximately 8:45 a.m. and the last patient left by 12:00 or 12:30 p.m. Thus, some women are in the clinic for four hours.
For the interviews, Dr. Romo advised all of the other doctors that we were in the clinic with her permission and to please send their patients to us after the exam if the patient wanted to participate. Six women were interviewed in the New Civil Hospital, however one participant did not live in Guadalajara, but in a nearby cabecera. This interview was placed in the cabecera category. The clinic arranged for the interviews to be conducted in an unused exam room furnished with a desk and a bed. When the patient came to the room, the research was explained, the informed consent was read to her and then signed before the interview began. More interviews were desired, but after Dr. Romo was called to another department in the hospital, the other doctors did not send their patients to the interview.

_Ciudad Guzmán_

Various manners of sampling were incorporated into the recruitment of participants in Ciudad Guzmán. The majority of participants were solicited opportunistically and through snowball sampling. Other participants were clients of a midwife registered with the IMSS in Guzmán. In these cases, the midwife asked permission from the pregnant woman to give us her address. The woman was then visited and, if consent was given, interviewed in her home. One participant was interviewed at the Health Center in Ciudad Guzmán. The entire interview took 4 hours because the participant was continually called back for another procedure. The Health Centers and IMSS hospitals work on a _ficha_ system also. The nurses of the Health Center in Ciudad Guzmán were suspicious of my presence and upset that the director had not informed them of the investigation. Possibly, this was a factor in the difficulty I experienced in soliciting interviews in this particular clinic. Finally, other participants were recruited in the IMSS clinic. Dr. Rafael Bustos Saldeña introduced me to the nurse, Enfermera Especial (Special Nurse) María Dolores Cortéz Vizcaíno, in the Maternal and Child unit (EMI), who then accommodated the
investigation in her office. She provided her own desk for the interviews and asked each patient if they would be willing to submit to the interview, moving her work to the back of the room. The patient then came to me, the research was explained, the informed consent read and signed, and the interview conducted at the nurse’s desk in the EMI. The nurse was absent from the room during each interview. Fourteen women were interviewed in the EMI at the IMSS clinic. One participant, however, was there with a family member and does not receive health care coverage from IMSS.

**Rural Cabeceras**

Four rural cabeceras were visited during Phase II of the investigation: Zapotitlán de Vadillo, Zapotiltic, Tuxpán, and Tecalitlán. Sampling and recruitment method for the first three cabeceras was conducted in the same manner. Prior to interviewing in these towns, written permission was obtained from the directors of the Health Centers in each locale through the Ministry of Health (SSJ), Region IV. Upon arriving at the health center, either myself, or a nurse, searched through the prenatal records in alphabetical order to find patients who were at least six months pregnant, although in some cases the nurse added a patient name to the list whom was in an earlier stage of pregnancy. After a sufficient number of names and addresses were written down (approximately 15) to account for a person not being available or not wanting to participate, the research assistant and I set out on foot to locate the women and ask for an interview. We knocked on the door and explained to the potential participant that her name was on a list obtained from the Health Center and presented the research. At this point it was essential to explain to each woman that we did not work for the Health Center or any other organization, and that the research was an independent investigation for my dissertation work. If the woman agreed to continue, the informed consent was read to her and signed, and the
interview conducted in her home. Eight pregnant women were interviewed in Zapotitlán de Vadillo, seven in Zapotiltic, and seven in Tuxpán. In Tecalitlán, the two participants interviewed were located through word-of-mouth and not through the local Health Center.

**Ranchitos**

Ranchitos as a site category in Phase II refers to any town visited that is not a cabecera. Mexicans refer to these places as ranchitos, despite at least one of the towns included in this study, Copala, having a population large enough for a Health Center (pop. >2500). All of the ranchitos are located in rural areas, some of them several hours by car from the nearest city, such as Ciudad Guzmán. The ranchitos visited in this study are Copala, Jiquilpan, San Juan Espanatíca, Los Laureles, Los Colomos, Poncitlán, La Yerbabuena, and Ejido Jose María Morelos. In Copala, San Juan Espanatíca, Los Laureles, Poncitlán, and Ejido Jose María Morelos, participants were located with the help of a midwife from South Region registered with IMSS in Ciudad Guzmán. Not all participants were users of the midwives, but the midwives knew them and were aware of their pregnancy. In Copala, the midwife allowed some of the interviews in her home and escorted us to others while one was solicited opportunistically from the street. In San Juan Espanatíca and Los Laureles, three midwives, two of whom are sisters, accompanied us to homes of pregnant women either in their care or with whom they were acquainted. In Poncitlán and in Ejido Jose María Morelos, the midwife took us to the homes of pregnant neighbors. In Jiquilpan, La Yerbabuena, and Los Colomos, pregnant women were located with the help of acquaintances through snowball sampling.

**Whole Dried Blood Spot Methodology**

A blood sample through finger prick was taken as part of the interview for later immunoassay in the Developmental Ecology and Human Biology Laboratory in the Department
of Anthropology at the University of Alabama, under the direction of Dr. Jason DeCaro. Samples were analyzed for Epstein-Barr Virus antibodies, an indicator of stress, and C-Reactive Protein, an indicator of acute infection. The informed consent signed for the interview discussed the blood sample and advised of any risk and pain involved. Only one woman refused to give a sample after her husband told her not to. I was trained by Dr. Javier García de Alba and two nurses at the Centro Medico de Occidente in Guadalajara to perform the finger prick. The research assistant is a licensed nurse and, thus, is also trained in blood sampling through finger prick. The puncture was usually made in the left forefinger, and two to four droplets of blood were placed on standardized filter paper (#903 Whatman). Ideally, each drop should contain about 50 μL of blood (McDade 2007). The filter paper is marked with four circles to facilitate sampling. The lancets were the type generally used by diabetics for home glucose testing. A standard automatic lancet pen and disposable lancets were used to prick the finger. A lancet pen is shaped like an ink pen. The lancet is secured in the end of the pen and, by pushing a button on the side, a trigger release quickly pushes the lancet into and out of the finger resulting in a puncture. Disposable sterile latex gloves were worn on both hands, putting on the left glove first, then the right. Before putting on the gloves, all materials were laid out to avoid contamination of the gloves, the cap was removed from the lancet pen, the lancet removed from the box, the cotton ball container with cotton balls soaked in isopropyl alcohol opened, and the filter paper taken from its package. Once the gloves were on the hands, a cotton ball was taken from the container and used to sterilize the lancet pen. The cap of the lancet was removed and the lancet placed in the pen, followed by capping of the pen. A clean alcohol-soaked cotton ball was used to sterilize the outside of the pen. The puncture depth of the lancet pen was maintained at level five, the most profound, because most women’s hands were calloused with thick skin.
from years of performing daily tasks such as tortilla-making, laundry, house cleaning, et cetera. The participant’s finger was sterilized with two clean cotton balls, then pricked. The first droplet was wiped away. After placing the droplets onto the filter paper, a cotton ball was placed over the finger. The blood sample on the filter paper was allowed to dry before being placed into a paper envelope. The paper envelope was later placed into a quart-size Ziploc freezer bag with a desiccant pack to regulate moisture. Contaminated sharps (lancets) were disposed of in a red plastic container marked with the biohazard symbol. All contaminated cotton, gloves, or other materials were disposed of in a red plastic bag marked with the biohazard symbol. The red plastic containers and bags with contaminated materials were discarded at the New Civil Hospital in Guadalajara and the IMSS hospital in Ciudad Guzmán. All Ziploc bags with samples were placed into an airtight plastic container and stored in a freezer (-20 - -30 degrees Centigrade) at the IMSS hospital in Ciudad Guzmán with permission of Dr. Rafael Bustos Saldeña. The identification number of each participant was written with a Sharpie permanent marker on the filter paper, the paper envelope, and the Ziploc bag. Additionally, the filter paper and Ziploc bag had the date of the interview, the location, and the interviewer’s name. All medically-related materials, except for the desiccant packs, were purchased in medical supply stores in Ciudad Guzmán. After the fieldwork was completed, the samples were removed from the freezer and transported by car from Ciudad Guzmán to the lab at the University of Alabama where they were again placed in a freezer to await analysis.

**Lab Analysis**

Immunnoassay of the Epstein-Barr virus (EBV) antibodies and C-reactive Protein (CRP) was conducted under the direction of Dr. Jason DeCaro in the Developmental Ecology and Human Biology (DEHB) Laboratory in the Department of Anthropology at the University of
Alabama. The protocol for the dried blood-spot EBV antibody is an adaptation of a commercially available enzyme-linked immunosorbent assay (ELISA) that measures IgG antibodies against the EBV viral capsid antigen (VCA) complex (McDade et al. 2000). Most materials come with the assay kit, however, additional equipment was provided by the DEHB lab or purchased for the assay, including a microplate spectrophotometer, microplate washer, deionized water, single channel and repeat pipettors, incubator, rotator, freezer, and facilities for biohazardous waste disposal and other standard wet lab resources.

For the EBV assay, 1/8 inch samples from the dried blood spots are removed with a hole puncher and eluted overnight in glass tubes with sample diluent from the kit. Diluted serum is then incubated with synthetic peptide p18 already bound to microtiter plate wells. The EBV antibodies bind to the p18 peptide. Horseradish peroxidase-labeled anti-human IgG is added and binds to the EBV antibodies creating an antigen-antibody complex. Chromogen/substrate is added and reacts with the horseradish peroxidase, resulting in color development. The spectrophotometer reads the absorbance via reflectance in each well of the microtiter plate. The absorbance is positively related to the concentration of EBV VCA-specific IgG antibodies.

The ELISA protocol for the CRP assay (Brindle 2006) was adapted in the DEHB lab by Dr. Jason DeCaro. The assay uses commercially available reagents. Anti-human CRP antibodies are used to capture CRP from the sample, which is then bound by a second, peroxidase-conjugated anti-human CRP detection antibody. Additional equipment required includes a microplate reader and washer, a hematology centrifuge, pH meter, and standard wet lab resources.

For the CRP assay, 1/8 inch samples of the dried blood spots are removed with a hole puncher and eluted overnight with CRP assay buffer created in the lab. Diluted serum is then
incubated with a mouse monoclonal antibody (MAb), clone C5 (available from Biodesign) bound to microtiter plate wells. This is the capture antibody. Biotinylated Biodesign MAb C6 is added to the wells, binding the CRP already bound to MAb C5 in the plates. The MAb C6 is the detection antibody. Horseradish-peroxidase-conjugated streptavidin is added, which binds to the biotin on the detection antibody. A substrate solution is added, resulting in color development. The spectrophotometer reads the absorbance via reflectance. The absorbance is positively related to the concentration of CRP.

Inter-assay coefficients of variation (CV) are computed as the CV across mean values for each control across separate assays. This is a measure of inter-assay precision (i.e., how similar the results are from the same sample, measured run-to-run or day-to-day). Intra-assay CVs are computed as the mean CV across duplications for each control within assays. This is a measure of the intra-assay precision (i.e., how similar the results are from the same sample, measured twice or more times on the same plate). Table 7.8 gives the inter- and intra-assay CVs for the high and low controls for EBV and CRP. Three runs were carried out for each variable. In Run 2 for CRP, an error in elution resulted in an unusable high control. In Run 3, there was a possible error in pipetting causing a high CV on the high control duplication. Although these two occurrences do not definitely indicate a problem with inter-assay precision, the results must be interpreted with caution.

<table>
<thead>
<tr>
<th>Table 7.8. Quality Control (CV) for EBV and CRP assays.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EBV</strong></td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Inter-Assay</td>
</tr>
<tr>
<td>Intra-Assay</td>
</tr>
</tbody>
</table>

Due to insufficient blood spot samples, sampling error, and laboratory error, 21 participants were excluded from the EBV analysis, leaving 65 participants (blood samples were
not taken from two participants). McDade et al. (2000) suggest a threshold of 10 for CRP. Three cases had CRP values slightly higher than 10 (e.g., 10-12). Due to the high number of participants already excluded because of error, it was decided to include these three cases in the analyses.

**Data Analysis: Qualitative and Quantitative Analyses**

All open-ended questions and observations from both phases were analyzed for qualitative data on beliefs and practices during pregnancy. Data was coded and entered into SPSS 16.0 for further analysis of bivariate associations between beliefs in folk illnesses and traditional practices, and stress and social support, as well as other demographic factors. Ethnographic data provide a deeper understanding of the relationships and interactions observed and identified through statistical analysis. Responses to why a participant visited a certain type of practitioner and what that practitioner did during the visit were coded and analyzed for themes associated with women’s perceptions, care received, and dimensions of traditional and biomedical models of care. Case studies of some of the participants and the midwives build a more comprehensive appreciation of decision-making and pragmatism in a pluralistic reproductive health care setting.

Bivariate analyses were conducted between all major variables such as age (years), social class (1=lower, 2=middle, 3=upper), SES, estimated gestational age (EGA in months), number of pregnancies, site (1=ranchito, 2=cabecera, 3=semi-urban, 4=urban), marital status (1=single, 2=cohabitating, 3=married), education (years), number of people in the household, PSS, PRA, EBV antibody levels, stressful life events, perceived social support, social interaction, cultural competence, and cultural consonance. Multivariate analyses were performed with the dependent variables perceived stress, pregnancy-related anxiety, and Epstein-Barr virus antibody levels.
Linear regression models were created with each of the dependent variables controlling for age, marital status, SES or site, and estimated gestational age or number of pregnancies. Perceived social support and/or social interaction were entered into the models following the first block of covariates, then cultural consonance was entered in the last block of each model. Interaction effects were tested for cultural consonance and perceived social support and social interaction on the dependent variables.

Marital status was recoded into a dichotomous variable for the regression analyses (0=not single, 1=single). Site was recoded into a set of dummy variables. Due to the government criteria for social class designation, most of the ranchitos are considered lower class. Due to sampling bias, the majority of the participants from the ZMG is lower class. Therefore, the site designations of ranchito and urban are heavily skewed to lower class participants, although each site category contains sufficient diversity to produce different bivariate results than social class. In the regression analyses, site and SES are both considered socioeconomic measures. For the regression analyses, cabecera and semi-urban were combined leaving three categories for the set of dummy variables: 1=urban, 0=not urban and 1=ranchito, 0=not ranchito. The two variables urban/not urban and ranchito/not ranchito were entered into the regression equations for the dependent variables perceived stress and Epstein-Barr virus antibody levels. SES was entered into the regression equation for pregnancy-related anxiety. To account for prenatal characteristics, EGA was entered into the regression equation with the dependent variable perceived stress and number of pregnancies was entered into the equation with the dependent variable pregnancy-related anxiety. Number of pregnancies was truncated after the number four. No pregnancy characteristic was entered into the equation with EBV.
**Conclusion**

The research for this dissertation was divided into two phases. The first phase was a cultural domain analysis of a good pregnancy. Women from all socioeconomic strata, ages, and sites were included in freelisting, pile sorts, and a rating task. The second phase was an interview with pregnant women of all socioeconomic strata and sites, including questions on the cultural consensus model, cultural consonance, psychosocial stress, stressful life events, and a host of sociodemographic factors. A variety of sampling methodology was employed to obtain a diverse sample in both phases.

1. The 2004 classification is limited to three major divisions, Alta, Media, and Baja. The Alta and Baja strata contain three subdivisions, giving a total of seven subdivisions instead of the eight used in 1990. The current divisions do not have specific definitions, but are comparisons based on 27 criteria such that the highest, 7, meets more criteria than 6, and so on. Thus a 7 is the highest and a 1 is the lowest. Criteria include piped water, roofs and walls made of durable materials, sewage service, number of people in the household, education, literacy, occupation, etcetera. A comparison of the current map available online (INEGI 2009) to the 1990 map reveals considerable classification change, however, the 1990 map is still useful in deriving a stratified sample for the purposes of this research and continues to be used by the Unit of Social, Epidemiologic, and Health Services Investigation. Although not exact, it appears that the Baja, Media, and Alta strata from 1990 now comprise the Alta stratum in 2004; and the Marginada stratum from 1990 is now divided into the Media and Baja strata. INEGI may have changed the criteria for establishing the divisions, or the standard of living in the ZMG has improved. 2004 census data shows 98.10% of the population in the ZMG occupying the Alta stratum, with 69.21% at Level 6 and 28.89% at Level 7. Only 1.88% of the population in the ZMG resides in the Media stratum (Level 4), and .01% in the Baja stratum (Levels 3, 2, and 1). In my opinion and that of my informants in Ciudad Guzmán, these new classifications do not match the reality of most people’s socioeconomic situation.
CHAPTER EIGHT: OBSTETRICS AND MIDWIFERY IN MEXICO

History of Obstetrics and Midwifery in Mexico

The Mexican health care system began to establish a national practice in post-independent Mexico as the country itself was forming a viable national identity in the international arena (Cházaro and Kersey 2005). At this time, in the 1830s, Western biomedicine was adopted by the government and promoted through policy, initiative, and education. Education was viewed as a way to enlighten the public and improve the standard of living, with the professionalization of medicine one means of achieving international stature (Penyak 2003). Obstetrics courses were first offered in Mexico in 1838 at the newly renamed National School of Medicine (Cházaro and Kersey 2005). In 1866, the Maternity and Children’s Hospital was opened in Mexico City. During this time, midwives were still attending most births as the doctors could not practice obstetrics for normal delivery, only attending a birth when called in by a midwife (Arney 1982).

Although the traditional practice of midwifery was looked upon as outdated, the medical system made early efforts to professionalize midwifery. In 1833, the first National School of Medicine was established by Vice President Valentín Gómez Farias (Penyak 2003). Women’s education in obstetrics was promoted and the school succeeded in certifying hundreds of women in midwifery, however, male physicians denigrated the female scholar and practitioner. Women were only allowed to obtain midwifery licensure and not medical degrees. Both men and women sought midwifery certification during this time. It was common for women to take the classes, but not complete the degree, therefore, many doctors considered them non-professional and
referred to them as “comadronas,” aligning them with traditional midwifery. The term “comadrona” is used in traditional settings to refer to midwives. By calling the newly trained parteras (the term used for midwives in Mexico today) “comadronas,” the doctors and others were essentially devaluing their training by aligning them with the untrained midwives in the rural areas. Juan María Rodríguez wrote in his 1869 thesis on obstetrics that “incompetent women” work as midwives and alluded to the high number of dead babies and mothers who would rise against the ignorant midwife if they could. “Men of true knowledge took charge and elevated [the art of midwifery] to the height its importance demands” (Penyak 2003:63).

Rodriguez later became a professor at the National School of Medicine and used his own textbook in his classes, continuing to promote male superiority in the profession, even to his female students, some of whom joined the campaign against the “comadronas.” Contemporary journals also published essays on the ignorance of female midwives and the inexperience they brought to the childbearing bed (Penyak 2003). In keeping with the theme of modernization, education and certification was only offered to women of pure blood, in other words, the criollas and mestizas, not indigenous women (Penyak 2003), because indigenous heritage represented ignorance and old ways. Indigenous women were, of course, the traditional practitioners of midwifery, however, their practice was not, and is still not, recognized as a profession.

The Mexican medical system began, in the late 1800s and continuing until the 1970s, to ignore and devalue any form of traditional practices, including traditional midwifery (Sesia 1997), as the biomedical model that was adopted focused on curative rather than preventive practices (Parra 1993). The government was more concerned with “modernizing” the health care system by introducing and reproducing biomedicine and technology, attempting to expand from the urban centers to the rural areas (Sesia 1997). However, in the late 1970s, the government...
began to recognize and accept traditional practices as acceptable viable aspects of the culture. Given the limitations of the biomedical paradigm, midwifery and herbalism are the only two practices that are suitable for incorporation into medical legitimacy because of their empirical and technical nature (Sesia 1997). Thus, beginning in the 1970s, training programs for traditional midwives were instituted to incorporate rural midwives into the biomedical agenda of expanding primary health care to rural areas (Penyak 2003; Sesia 1997).

Despite the availability of midwifery certification to select female and male scholars, Carillo (1999) argues that the training of certified midwives in the 19th century was offered only as a means to completely eliminate traditional midwifery. Through making midwifery a professional achievement via education and certification, traditional midwifery was reallocated as a premodern practice characterized by ignorance (see Davis-Floyd 2001 for a discussion on the use of the terms pre- and postmodern in reference to practices in developing countries). In addition, as discussed above, the women who did seek official certification were scrutinized for their femaleness and accused of not being professional or capable (Cházaro and Kersey 2005; Penyak 2003). Carillo (1999) further argues that Mexican medicine achieved the goal of eliminating midwifery as a profession altogether in the 20th century by training traditional midwives through short courses. In the beginning, the goal was to eliminate the traditional midwives with literate, medically-trained professional (certified) midwives (Carillo 1999). However, as rural midwives were trained and doctors began to attend normal labor and delivery, the parteras tituladas, or certified professional midwives, were no longer needed and eventually the profession disappeared (Carillo 1999). The parteras tituladas attended most births in the 1950s. Because of their presence at hospital births, many women were convinced to have their babies in the hospital (Davis-Floyd 2001). Beginning in the 1960s, the social security hospitals
were pressured by doctors to switch from midwifery-attended births to physician-attended births, therefore, the parteras tituladas were restricted from attending deliveries (Carillo 1999). Furthermore, the doctors supported the training of rural midwives in an effort to eliminate the certified professional midwives, their competition (Carillo 1999). However, a new type of trained midwife, the partera professional, is emerging (Davis-Floyd 2001). These midwives seek extensive training and certification, many times through U.S. agencies, and align themselves with the midwifery renaissance that is taking place in the United States. In 1981, CASA (Centro para los Adolescentes de San Miguel de Allende), a non-profit health and social service agency with a hospital, opened in San Miguel de Allende, Guanajuato. Over time, CASA began to offer classes in women’s sexuality and health and eventually midwifery. It now provides the first accredited midwifery school in Mexico with both biomedical and traditional training in a three-year intensive course followed by one year of apprenticeship to a rural midwife.

**Obstetrics Today**

Today obstetrics in Mexico is much like obstetrics in the United States. Routine prenatal care mirrors biomedical prenatal care around the globe. Women can either have prenatal care, or “control” as it is called in Mexico, through a social security institute such as IMSS, through the national health insurance program called Seguro Popular, as indigent care for the uninsured through the Ministry of Health, or pay out-of-pocket for a private physician. Women who have Seguro Popular or who are uninsured utilize the Health Centers, Health Houses, modules, and public hospitals for their prenatal care. A woman with Seguro Popular must receive her care where she is a registered resident. Furthermore, a patient must attend all of her prenatal appointments at that clinic to be seen there, and to receive her delivery (at a hospital) and care at
A minimal cost. One participant from Tecalitlán, a cabecera with medical facilities, had to travel two hours up the mountain to her hometown of San Isidro to see the doctor and nurse who were at the Health House once a month for her prenatal visits, because that was where she was a resident and so her insurance plan gave her coverage there. Many of the residents of San Isidro split time between their village and Tecalitlán. The bus only goes to San Isidro twice a week, so the participant would have to plan accordingly and stay for a few days.

As part of the Phase II interview, women were asked to describe what happens during a visit with the doctor and why they sought care from a biomedical doctor. Most women replied that prenatal care involves blood and urine analysis, ultrasounds, checking blood pressure, weight, and size, and listening to the baby’s heartbeat. As part of the interview process, some study participants were recruited through prenatal clinics, including the IMSS clinic in Ciudad Guzmán, Health Centers in Ciudad Guzmán, Túxpan, and Zapotitlán de Vadillo, and the New Civil Hospital in Guadalajara.

**IMSS Clinic in Ciudad Guzmán**

I was able to spend a few days inside the IMSS clinic in Ciudad Guzmán with the Maternal and Child Health nurse, Special Nurse (*Enfermera Espécial*) María Dolores Cortés Vizcaíno, who was very accommodating and allowed me to observe her consultations with patients and provided me with her desk for interviews (see Figure ?? - coming). She even asked patients to stay in the clinic so I could interview them.
At all clinics, women arrive around the same time in the morning and sign in with the nurse. They are then given a *ficha*, or slip of paper with their appointment time, and sit down to wait their turn. At the IMSS clinic, each patient first came in to the see the nurse in her office. Her office had a desk, an exam table, scales, and a table with various medical supplies. The patient would first have her weight taken, then lie on the exam table. The nurse measured the fundus and felt the belly to determine the position of the baby while the woman’s temperature was being taken. Her blood pressure would be taken next and then they listened to the baby’s heartbeat with the Doppler. They then moved to the nurse’s desk where they discussed the baby’s growth, any problems or concerns, and the woman’s feelings about the pregnancy. Nurse Cortéz was reassuring to the women that their feelings and emotions were normal, counseling them not to listen to other women talking about bad experiences. She usually emphasized that the baby is a gift from God and that everything would be okay. At this point, Nurse Cortéz would leave the room and I would carry out my interview with the women. After seeing the
nurse, the patients returned to the waiting area to see the doctor. The visit with the doctor is to have an ultrasound and discuss urine analysis, plans for the hospital and anything else that might be necessary for that appointment.

**Health Centers in Ciudad Guzmán and Túxpan**

At the Health Centers (Centros de Salud) in Ciudad Guzmán and Túxpan, I had the opportunity to sit and observe from the waiting area. In the Health Centers, patients come by in the morning and register at the desk and wait to be called up with the ficha. The clinic begins at 8:00 a.m. There are other places in large cabeceras, called modules (*modulos*) where a woman can be seen as well. These are clinics usually held at a community center on a certain day of the week from 8:00-12:30, but modules can also be mobile units that travel to rural areas. At the Health Center, there is no specific maternity unit, so pregnant women are waiting with other patients for their fichas and to be seen. There are usually two or three medical students serving as the doctors who are completing their service requirement, although the director is a doctor and there is at least one other doctor on the premises. The clinic appeared to have about five exam rooms.

Once a pregnant patient has her ficha, a process starts by which the patient is called back several times for various parts of the visit. First she will have her paperwork done, next vital signs are taken, followed by urine and blood analyses. If she needs a tetanus vaccine she will be called back again for that. Finally she will see the doctor. The one participant I interviewed at the clinic was there for over four hours with her husband and children. The interview had to be done in steps because she kept being called back for something else. I decided not to try to interview there again for two reasons: one was the chaotic atmosphere which made interviewing difficult; the other was the attitude of the nursing staff. They were suspicious of my intent and
seemed resentful that no one had notified them that I would be there. In fact, while I was finishing the interview, someone moved my bag and the nurses said they did not know anything about it. I began to panic because my field notes were in the bag and after about 15 minutes the bag was pulled from the lost and found which I had been told was empty. At the Health Center in Ciudad Guzmán, there were dozens of people packed into the waiting area, with nurses and medical and nursing students doing paperwork wherever they could find a spot. Patients were standing against walls and sitting on floors as the available seating was full.

The Health Center in Túxpan is in a new building that had recently opened when I was there (Figures 8.2 and 8.3). It was much more organized and had adequate seating in the waiting area.

Figure 8.2. Waiting room and nurses’ desks in Health Center in Tuxpan.
Again, patients arrived early to register for their ficha and then went through the process of being called back for various stages of the visit. One interview was conducted at this Health Center. I had the signed permission from the director of the Health Center to conduct interviews with the pregnant patients, so the doctor and nurses allowed me to go through the files and identify low risk women who were at 6-9 months of pregnancy to interview. My research assistant and I then went to the homes of the women to ask for an interview. In Zapotitlán de Vadillo, the nurses at the Health Center went through the files themselves and provided a list of all pregnant patients in the appropriate gestation range. We then went to the women’s homes to ask for an interview.

**New Civil Hospital in Guadalajara**

The final biomedical facility where I conducted interviews was the New Civil Hospital in Guadalajara. This hospital, like the Health Centers, sees uninsured patients. Dr. Iliana Romo, the head physician in the Maternal Clinic in the hospital, was very accommodating and provided
us with a private room in which to conduct the interviews. The clinic is located on the fifth floor of the hospital and is reached by elevator. Patients begin arriving at 8:00 a.m. to register for their ficha. By 9:30 on the first morning we were there, the waiting room was so full that people were standing (Figure 8.4).

![Figure 8.4. Packed waiting room in New Civil Hospital in Guadalajara.](image)

The ficha tells them what time they will be seen and which doctor will see them. Certain doctors specialize in certain complications, therefore, if a patient has a risk she may have to wait to see the doctor that deals with that specific issue. The clinic has nine doctors and two nurses, twelve exam rooms, and sees more than 100 patients a day. After receiving their ficha, the women then form a line in the waiting area to have their weight and blood pressure taken (Figure 8.5).
Figure 8.5. Women standing in line to be weighed and blood pressure taken in the New Civil Hospital.

The patients usually begin going back to see the doctors around 8:45 or 9:00 a.m. Some patients are in the clinic for up to four hours and the last patient usually leaves around noon.

Midwifery Today

Ironically, government efforts through the social security systems (IMSS and ISSSTE), the Ministry of Health (SSA), and the National Indian Institute (INI) to train traditional midwives in basic bio-obstetric practices helped to ensure the perpetuation of ethno-obstetric practices in both rural and urban areas. These government agencies pursued these efforts because of the lack of available physicians to adequately meet the needs of women in rural areas. Many midwives no longer attend births, but do participate in prenatal and postpartum care, such as the sobada, prescription of vitamin shots and teas, external cephalic version, wrapping the umbilical cord and monitoring the health of the cord stump, and closing the womb. Closing the womb is a practice involving skeletal manipulation that is believed to be necessary to bring a
woman’s bones and organs back together postpartum (see Oths 2002). Additionally, humoral theory, or hot/cold theory, is still prevalent in Mexico and many women believe their bodies to be open and, thus, subject to aire (dangerous air) after delivery. As most of the midwives told me, they no longer attend births, but they do attend pregnant and recently delivered women.

Certified midwives, or parteras tituladas, differ from the traditional midwives who participate in the two-week training course offered by the IMSS and ISSSTE, SSA, and INI (Davis-Floyd 2001; Huber and Sandstrom 2001; Sesia 1997). In the late 1970s, Mexico’s government took aim at improving maternal and child health services and reducing the rate of population growth.

Figure 8.6. “Family Planning” poster hanging in the home clinic of a midwife in Guadalajara.

Midwives were a convenient intermediary for both family planning initiatives and improving primary health care in rural areas where they were already present, well-known, and respected (Sesia 1997). The training courses were successful in bringing biomedical elements into the traditional practice of midwifery, such as sterilization of instruments, sterile cutting of
the umbilical cord, and use of pitocin shots to speed up delivery of the baby and delivery of the placenta. Furthermore, midwives are taught in these courses how to recognize biomedical risk factors, such as swelling associated with pre-eclampsia, and to monitor the baby’s heart rate during labor.

Huber and Sandstrom (2001) examine variation in midwifery practices across the country from a medical ecological perspective. They detail indigenous practices according to specific groups, as well as region. The specialization of midwifery and the manner of giving birth (e.g., alone, with female attendants, or with a midwife) can be correlated to social and environmental factors. In the state of Jalisco, where my research was carried out, the Huichol formerly inhabited much of the area. The Huichol did not have many midwives and women often had their babies alone or with female relatives. Huber and Sandstrom (2001) point to ecological factors, such as the rugged terrain, that kept the population down among the Huichol and, thus, pre-empted the need for specialists in birth. The argument is that the population never grew large enough to require specialization. Despite very few traditional specialists of midwifery among the Huichol, it appears that the practice increased among the rural mestizo population as settlements increased in colonial and post-colonial times. Still, Jalisco, like many other Mexican states that have small indigenous populations and are more developed, has a low rate of nurse or midwife attended births compared to states with high indigenous populations. In 2007, 13.2 percent of registered births in Mexico that specified an attendant were attended by a nurse or midwife (nurse and midwife were lumped into one category) (INEGI 2009). In Jalisco, that number was much lower at only three percent. According to Dr. Alejandro Almaguer, director of CASA, most states have a rate of about one percent of midwife-attended deliveries, while Chiapas and Oaxaca, both poor states with high indigenous populations, have rates around 60
percent (WHO 2008). In my sample in Jalisco, of 57 women who had previously given birth, 19 percent (n=11) had given birth with a midwife with at least one of their other children. The remaining 81 percent (n=46) had given birth to all of their children with a biomedical doctor in attendance.

The number of births in Mexico attended by a nurse or midwife has steadily declined in the past two decades from 853,774 in 1985 to 324,217 in 2007 (INEGI 2009). The overall birth rate has declined in Mexico, as well, but the percentage of midwife or nurse-attended births is lower. Huber and Sandstrom (2001) note that, over the past 25 years, SSA and IMSS hospitals and clinics have increased in number in rural areas. Midwives reported attending fewer births now than in the past because of the increased availability of biomedical care, claiming some women desire the pain management, but also noting the low cost, or absence of cost, to receive care from a hospital or clinic (Huber and Sandstrom 2001). Doña Cristi, a 90-year-old midwife with whom I spoke, echoed these claims. She said what women want has changed. Today, women want to go to the hospital to have their babies. Doña Cristi has been practicing for 70 years and says that, in the past, in a week she would attend two to three births occurring during the day and three to four during the night.
Figure 8.7. Doña Christi, age 90.

Now, most of the midwives I spoke with said they attend two to five births a year, and many have ceased to attend births. Two midwives I spoke with reported attending close to 20 births a year, but they were exceptions. Evita, my research assistant and a midwife herself, added that many women still hold on to traditional ideas about pregnancy and childbirth, but they go to the hospital because the care is free or of minimal cost. Furthermore, women cited healthcare professionals, television ads, and other media as devaluing the authority of midwifery.

When asked if she had seen a midwife during her pregnancies, one woman replied, “Never. I didn’t know if it would cause a miscarriage. The television says so.” (Nunca. No sabía si una partera causa un aborto. La televisión dice así.) It is noteworthy to add here that Huber and Sandstrom (2001) looked at the impact and interference of traditional practices in Mexico with receiving and adhering to biomedical care and recommendations during pregnancy. They concluded that the practices that were perpetuated by both the midwives and the women themselves were not obstacles to seeking or receiving care.
Sesia (1997:405) quotes one of her midwife informants who states that, “Women come here on their own when they need to.” This statement succinctly delineates the gap in the biomedical obstetric approach and the traditional midwifery approach. Bio-obstetrics advocates monthly prenatal visits to determine risk and monitor the pregnancy, functioning under the assumption that birth is a medical process requiring medical management. Ethno-obstetrics does not advocate frequent visits to a midwife; rather, women usually seek midwifery care when they perceive a need.

**Sobada or Prenatal Massage**

Only one woman out of my sample of 88 pregnant women planned to have her baby with a midwife, however, 32 percent (n=28) had visited a midwife at the time of the interview. Others indicated that they planned to visit a midwife before the end of the pregnancy. These women stated that they went to the midwife primarily to adjust the baby in some way, because they were in pain or uncomfortable, or for another reason. The most common treatment given for most complaints is the sobada. Thirty-six percent (n=32) participants in the study had already received a sobada, either from a midwife or someone else, such as a sobadora, or specialist in traditional massage, or a relative. Despite substantial variation in the indigenous practices of pregnancy and birth management in Mexico, one common practice existed, and still exists, throughout the country: the sobada (Huber and Sandstrom 2001).
Jordan (1994) discusses the prenatal massage in her accounts from the Yucatan. Sesia (1997) provides a detailed account of the prenatal massage in her study population in Oaxaca and notes a difference between women’s experiences and knowledge of the sobada and the midwives reasoning for giving them. Women claim to seek the massage when they are in need of being made comfortable (Sesia 1997). Indeed, seeking midwifery care for discomfort was the primary reason given by the participants in my study. For the midwives, however, the sobada serves more as a diagnostic tool to determine if the baby is breech and in need of an external cephalic version, or turning of the baby to a head down position (Sesia 1997).
Massage and body manipulation are an integral part of midwifery care throughout Latin America. Oths (2002) notes that manipulating the body and skeleton during pregnancy may or may not occur, but that in the Peruvian highlands skeletal manipulation (*compuesta*) is essential in the cuarentena to put the pelvic bones and reproductive organs back into place. Several midwives told me that part of their postnatal practice is to “close the womb” because things are out of place after birth. A handful of the participants cited this practice as one of the treatments received by a midwife postpartum. Midwives are not the only people with knowledge of the sobada. Pregnant women may also seek a specialist in body manipulation, a sobadora, for the prenatal massage, or they may go to someone who is not a specialist per se, but who does have experience, such as a family member (male or female) or older female neighbor.

The training courses that many midwives attend caution against the sobada and external cephalic versions, or turning of the baby, during pregnancy (Sesia 1997). However, as Sesia
(1997) found, even midwives who are more biomedically-oriented than others (for example, nurse-midwives) continue these traditional practices because it is what their clients seek from midwifery care. Receiving a prenatal massage and seeking care from a midwife were both elements of the shared cultural model of a good pregnancy identified in this research. Furthermore, cultural consonance analysis found that women are indeed seeking care from midwives and receiving the prenatal massage, if they feel there is a need for these services. Sixty-two (72%) agreed that the sobada was beneficial for the pregnancy and 32 (36%) had received a sobada, either from a midwife or another person. More were likely to have gotten one after our interview, as the midwives told me that they do not typically perform the sobada until the sixth month of pregnancy. This is in contrast to what Sesia (1997) found. The midwives in her study advocated starting sobadas around the fourth month to facilitate diagnosis of breech babies, and even earlier to position the womb in the center of the body to prevent future discomfort from displaced fetuses (Sesia 1997).

**Examples of Midwifery Today in Jalisco**

The shared cultural model of a good pregnancy, identified through cultural domain analysis with non-pregnant and pregnant women, incorporates both biomedical and traditional elements, as discussed in previous chapters. As part of an effort to purposively recruit pregnant women through biomedical practitioners and traditional practitioners, I was able to meet and carry out informal conversations with midwives in the region. In this section, I will provide give a brief description of the rural midwifery program with IMSS and present profiles of some of the midwives I was able to meet and spend time with. With the exception of Evita, who preferred her real name to be used, all of the midwives have been given pseudonyms.
The rural midwifery program with IMSS provides a brief training course and certification to traditional midwives. The head nurse at the IMSS clinic in Ciudad Guzmán oversees the midwives for the South Region, which is everything south of Guadalajara in the state of Jalisco. I worked with these midwives as well as the group from Tonalá, part of the Metropolitan Zone of Guadalajara. Two of the 27 midwives in the South Region group, Evita and Doña Chucha, are the regional coordinators for the group. Many of these midwives are scattered about the region, with 13 located in the city of Guzmán. Evita only knew of a handful of traditional midwives who did not work for IMSS. There was only one midwife in the area who worked for the Ministry of Health and none for ISSSTE, the other major social security institute.

The midwives are considered by IMSS to be a “social service” to the community. Their primary job is to provide family planning education, free oral contraceptives to adolescents and free condoms to anyone. However, their ability to discuss women’s rights and more radical family planning topics, such as abortion and the morning after pill, is limited. Although the women wear a white coat with the IMSS insignia, their work really is a social service, and their payment is nominal. The IMSS midwives in the South Region receive 150 pesos (US$15) every two months. This fee does not even cover the bus fare for some women to attend the required monthly meeting in Guzmán. More important to the women than money is the health insurance that comes with the job. However, they are supposed to lose their insurance once they are no longer working, but Evita fights for the older women and keeps it going by making sure they are seeing clients and turning in their paperwork. The Tonalá midwives do not receive any pay, just the insurance, and sometimes pay out-of-pocket for the contraceptives to give to their clients. The Tonalá coordinator recounted that the Head Nurse at the Tonalá IMSS clinic told the midwives they were dispensable and it was their choice to attend the meetings. Therefore, many
of them had quit working with IMSS and were practicing from their homes. Unfortunately, IMSS was in the process of dissolving the midwifery program when I left the country in December 2007, and Evita and her colleagues were unsure of what was going to happen to them. The letter she received from IMSS stated that for economic reasons, they were cutting out some of their subsidiary programs, including the rural midwifery program.

If a woman is uninsured, she can get biomedical prenatal and delivery care at a relatively low price, around US$100 total, as long as she attends all of her appointments. In comparison, the delivery of the baby with a midwife can cost anywhere from US$100-$200, depending on the midwife. Most midwives in the South Region only charge at the lower end of that, but the cost of the prenatal visits to the midwife is additional. A prenatal massage costs about US$3-$7 and other services can run US$2-$10. Some midwives barter for their services. Most midwives have other titles and jobs as well, such as curandera (traditional healer), yerbatera (herbalist), or practicante (uses biomedical practices, but is not professionally trained). Sadly, most of the midwives in the South Region group are older and, as Evita lamented, there are no younger women who want to fill the role.

**Doña Chucha**

Doña Chucha was the first midwife I met in Guzmán. She was 56 years old and had been practicing for 30 years. In her home she has a room right off the main sitting area that serves as her office. There is a desk, an exam table, a shelf with many medicines and charts on various aspects of the reproductive process. Doña Chucha is not just a midwife, but a curandera as well. In addition to the midwifery and curandera businesses, she and her daughter and daughter-in-law run a tortilla business from the home. She also makes and sells cheese, cream,
traditional weekend food, and *ponche* (an alcoholic drink); she has rental properties scattered throughout the city and sells goods that she acquires from the U.S.

**Figure 8.10.** Doña Chucha (right) and Evita with a laboring woman.

**Figure 8.11.** Tortilla business of Doña Chucha.
Doña Chucha has 20-30 pregnant clients a year. Her office is reflective of the biomedical-traditional fusion she practices, with the charts and medicines giving the appearance of a doctor’s office, but her oils and practices showing her curandera methods as well. Doña Chucha invited me to visit two of her pregnant clients for an interview. I also witnessed her performing an oration, or prayer for one pregnant woman who was on prenatal bedrest, and giving nutritional advice to another young pregnant woman who was having severe nausea, could not eat, and was likely anemic. At Doña Chucha’s home on the first night I met her, a young mother brought in her two-year-old daughter because she was “asustada” (fright sickness resulting from a susto). She said her daughter could not sleep, was cranky, and cried a lot. Doña Chucha asked if she had been out in the streets and exposed to a lot of air. The mother said no. So Doña Chucha performed an oration, or prayer, for the baby and also advised that she continue to eat well. For the prayer, she rubbed oil on the baby’s head, chest, and back and held her hand over the baby’s forehead and prayed to God Our Father. She asked that he heal the baby. The prayer lasted about two minutes, the woman paid a few dollars (in pesos) and was gone. Next came a girl who needed an injection. She had the medicine with her, but came to Doña Chucha to administer the shot. Last, a woman in her 30s or 40s came in complaining of abdominal pain. Doña Chucha asked me to come in and watch while she had the woman lie back on the exam table. She gently probed the lower abdominal area and had the woman lift her hips up at one point as she massaged. Finally, the conclusion was that the woman had a urinary tract infection or bladder infection with a fever and needed medicine. Doña Chucha wrote the prescription for an antibiotic for the woman. In the process, she also acquired a new pregnant client. The young daughter of the woman, about 14 years old, was pregnant and scared and Doña Chucha advised that she come back for midwifery care later in her pregnancy.
Figure 8.12. Desk and exam table of Doña Chucha.

Figure 8.13. Medicines in Doña Chucha’s clinic.

All of the pregnant women that Doña Chucha saw were also seeking care from a doctor and had sought her services only once or twice during the pregnancy. The exception was the one
birth I witnessed in Mexico that was attended by her and Evita. The woman had called on Doña Chucha to attend the birth, but had not received any prenatal care.

**Figure 8.14.** Cloth wall of impoverished house of laboring woman in “middle class” area of Ciudad Guzmán.
Figure 8.15. Toys and scrap wood strewn in home of a laboring woman in a "middle class" area of Ciudad Guzmán.

The birth took place in the woman’s home, a small structure with only one finished room shared by the husband, wife and four children (five with the newborn baby). Both of the midwives in attendance were very concerned with the lack of prenatal care, as well as the unsanitary condition of the woman’s house.
Evita

Figure 8.16. Evita massaging a laboring woman.

Evita is a modern midwife: she has studied chi and life force and is well-read on many spiritual topics. She is also a licensed nurse and works at the IMSS hospital in that capacity as well. She is in her late 40s and is very involved as a women’s rights activist and more. She is a licensed massage therapist as well, and was just finishing a massage in her office at the back of her house when I met her. There she has a massage table that also serves as an exam room for her pregnant clients. In addition to her midwifery and massage business, she is also an herbalist and was taking classes at a nearby school to obtain an official certification. She packages and sells herbs for teas and even teaches occasional classes at the Forestry and Environment school located in Guzmán. When I left, she had just been given a permanent job at the school creating and maintaining a botanical garden and a pharmacy garden. She also gathered knowledge and use of plants from the older midwives who were no longer practicing in some of the villages we visited.
Evita and her small granddaughter leading a protest against domestic violence in the plaza in Ciudad Guzmán.

Evita is not a typical Mexican woman and has no problem voicing her opinion to men or people of authority. She comes from a long line of activists and came into the profession of midwifery through her grandmother and has been practicing for at least 25 years. Her grandmother was a medical doctor, the first female doctor, she said, in the state of Michoacan who opened the first hospital for indigenous women in that state. Her grandfather rode for Pancho Villa and at some point her grandparents had to leave Michoacan and settled in the mountains in Jalisco. Evita says her first introduction to midwifery was accompanying her grandmother to home births because the indigenous women did not want to have their babies in a hospital. To that end, Evita is very proud of her Purepecha (indigenous group) heritage and frequently refers to them as her people. She is the only person I met in Jalisco in 15 months who ever mentioned any indigenous heritage.
While I was in Jalisco doing research, Evita had several meetings with either the Head Nurse at IMSS in Ciudad Guzmán or with the Head of the Rural Midwifery program at the IMSS hospital in Guadalajara. At one meeting, she was requesting that the midwives receive new uniforms, rather than hand-me-downs from the nurses. She also went to great lengths to make sure the older midwives got to the monthly meeting. If they could not travel to turn in their reports, she would go to them. On a number of occasions, she and I drove to visit one of her older colleagues in my truck so she could get their papers and they would get their pay.

Unlike Doña Chucha, Evita does not invoke God in her healing, but does incorporate very traditional elements into her practice. A typical prenatal visit with a client involved a sobada and consultation on emotions and feelings. Evita would have the pregnant client lie on her exam table so she could perform a sobada. She preferred to use lavender oil mixed with olive oil, or some other carrier while massaging. This was also what she used in her massage therapy business, along with other oils for varying purposes. To determine the sex of the baby,
she would dangle a top over the belly and ask the baby to direct the top in the appropriate direction. Usually she had already made a judgment as to the sex of the baby based on the shape of the pregnant belly. After discussing how things were going and how the woman felt, Evita would make dietary and exercise recommendations, and usually prescribe a tea.

Figure 8.19. Evita bound a woman’s belly with a cloth to help push the baby out.
Figure 8.20. Doña Chucha listens to the baby’s heartbeat with a Doppler monitor.

At the birth that she and Doña Chucha invited me to, Doña Chucha was the primary midwife and she and Evita followed, in my opinion, a mixture of ethno-and bio-obstetric practices. The sterilized tools were laid out on a sterile cloth. We all wore white IMSS lab coats and used latex gloves. Once Doña Chucha had vaginally examined the laboring mother, she did not touch anything else and changed her gloves several times. She also examined the woman with every contraction during the last few hours of birth. The woman was having a hard labor; we even left for a while and came back, so Doña Chucha wanted to administer a pitocin shot, but Evita was reluctant and talked her out of it. Instead, as the labor progressed into the final stages, Evita had the woman rise to her knees and hold on to the headboard and push. During this, Evita would use her fist to thump the woman along the spine and massage her in the lower back. When the baby finally came, a pitocin shot was administered to help speed along the delivery of the placenta. The woman’s abdomen was wrapped with cloth, a traditional binding practice that
helps close the woman back up after delivery. The umbilical cord was cut with sterile scissors and then alcohol and gauze were placed over it and the baby’s abdomen was also wrapped to keep the cord stump in place. Prophylactic eye drops were put in the baby’s eyes.

*Doña Lancha*

![Figure 8.21. Doña Lancha standing with Evita in her clinic.](image)

Doña Lancha is not one of the South Region midwives, but is in the Tonalá group. She is in her mid 60s and has a thriving business in the town of Tonalá, in a neighborhood called Jauja. Doña Lancha has a clinic adjacent to her home that has six beds, a bathroom and wash area, and a kitchen for her birthing mothers. It is similar to a freestanding birth center in the States. She has IV equipment, medicines, and other things she may need during a birth. In front of the clinic she runs a pharmacy that appears to serve much of Jauja.
Doña Lancha is essentially a practicante, a person who does not have a medical degree, but who practices basic medicine. We spent several days in her home, where she literally had pregnant women from the town lining up for interviews. She is a very respected figure in the
community, and people come to her pharmacy both for diagnosis and for medicine. She was by far the most utilized midwife I encountered in Jalisco.

Figure 8.24. Baby scales and medical supplies in Doña Lancha’s clinic.

The 12 women that I interviewed in her clinic were not all seeking her care, but many of them had visited her or planned to. Two women wanted to have their babies with her because, according to them, the staff at the local Health Center was so uncaring and rude and made them feel guilty for getting pregnant. And they hated the wait there, which could be four to six hours at times. During the time we were working with Doña Lancha, three women gave birth in her clinic in two days. She says it never happens that way and joked about how packed it was. Doña Lancha no longer works with IMSS, but practices independently. I did not have a chance to witness Doña Lancha with her pregnant clients and cannot comment on her practice in that regard.
**Doña Nati**

Doña Nati lives in San Juan Espanatica and has been practicing for decades. Recently she decided to quit attending births due to her age (early 70s). She now relies on a walker to get around and feels that she should not be attending births in case of an emergency. In her home, Doña Nati has her midwifery certification framed and hanging on the wall. I had the pleasure of witnessing Doña Nati perform a sobada for two pregnant women, one of whom had delivered her other three children with Doña Nati and was about to have her first hospital delivery (see Figures 8.8 and 8.9). The other woman had one small child and was pregnant with her second. She had seen Doña Nati during her other pregnancy as well. On both occasions, we drove to the women’s houses. She usually sees women this way, and either the husband or someone else will take her to the client’s home. For the sobada, the women first lay on their backs and Doña Nati massaged around the belly, feeling the position and adjusting the baby so that it was in a good place that would not be uncomfortable. She then had the women turn first on one side, then on the other, as she massaged their sides and thighs and then lower backs. The whole sobada lasted about 15 minutes. At one house, Doña Nati accepted a chicken as payment for her services.

**Prenatal Decision-Making and Practice**

Participants were asked if they had ever visited a doctor, midwife or sobadora and for what reason. Thirty-six women (41%) had seen a midwife either with the present pregnancy or before. Only one woman had not seen a doctor with a previous pregnancy and the remaining three who had not seen one with this pregnancy did see one with their previous pregnancy. Twenty-seven (31%) had received a sobada with this or a previous pregnancy, 16 women (60%) with a sobadora and 11 women (40%) from someone else.
### Table 8.1. Categories of reasons for visiting a practitioner during pregnancy.

<table>
<thead>
<tr>
<th>Reasons for Visiting</th>
<th>Doctor No. (%)</th>
<th>Midwife No. (%)</th>
<th>Sobadora No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>5 (4)</td>
<td>2 (4)</td>
<td>4 (18)</td>
</tr>
<tr>
<td>General Information</td>
<td>27 (21)</td>
<td>5 (11)</td>
<td>0</td>
</tr>
<tr>
<td>Specific Issue</td>
<td>34 (30)</td>
<td>36 (82)</td>
<td>16 (73)</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>15 (13)</td>
<td>2 (4)</td>
<td>0</td>
</tr>
<tr>
<td>Prenatal Care</td>
<td>17 (15)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>Have To 17 (15)</td>
<td>Referral 2 (4)</td>
<td>Just Happened 2 (9)</td>
</tr>
</tbody>
</table>

### Table 8.2. Examples of reasons for visiting a practitioner.

<table>
<thead>
<tr>
<th>Reasons for Visiting</th>
<th>Doctor</th>
<th>Midwife</th>
<th>Sobadora (or other person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>“to be calm”</td>
<td>“trust”</td>
<td>“because I was feeling nervous”</td>
</tr>
<tr>
<td></td>
<td>“for assurance”</td>
<td>“confidence in her”</td>
<td></td>
</tr>
<tr>
<td>General Information</td>
<td>“to check everything”</td>
<td>“to check everything”</td>
<td>“baby was on one side”</td>
</tr>
<tr>
<td></td>
<td>“to see how the baby is growing”</td>
<td>“for her opinion”</td>
<td>“pain”</td>
</tr>
<tr>
<td></td>
<td>“to know the baby’s sex”</td>
<td></td>
<td>“stress”</td>
</tr>
<tr>
<td>Specific Issue</td>
<td>“to check for problems because of the Rh factor”</td>
<td>“to get pregnant”</td>
<td>“baby was laying across/sideways”</td>
</tr>
<tr>
<td></td>
<td>“had complications before”</td>
<td>“to terminate the pregnancy”</td>
<td>“carrying low”</td>
</tr>
<tr>
<td></td>
<td>“low blood pressure”</td>
<td>“baby was laying across/sideways”</td>
<td>“pain”</td>
</tr>
<tr>
<td></td>
<td>“pain”</td>
<td>“carrying low”</td>
<td>“baby was sitting”</td>
</tr>
<tr>
<td></td>
<td>“threatening to miscarry”</td>
<td>“pain”</td>
<td>“sobada”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“tired”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“carrying low”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“baby was sitting”</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>“to know if pregnant”</td>
<td>“to know if pregnant”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“ultrasound”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“to check weight”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“to check blood pressure”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“to check for symptoms”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prenatal Care</td>
<td>“monitoring (control)”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“monitoring of the baby”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“monitoring of me”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>“because if you don’t go to your appointments, they won’t attend you”</td>
<td>“the doctor told me to [go to] the midwife…”</td>
<td>“the doctor massages each time I visit” (the doctor falls into the “other person” category)</td>
</tr>
<tr>
<td></td>
<td>“to get the paper marked to say I’ve been to my appointment”</td>
<td>“because I wasn’t going into labor”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“for the medical appointment”</td>
<td>“another pregnant woman at the Seguro (IMSS) told me to visit the midwife”</td>
<td></td>
</tr>
</tbody>
</table>
Table 8.1 displays the various categories of reasons given for visiting a doctor, a midwife, and sobadora while Table 8.2 gives examples of reasons. The numbers beside each category show the number of times that a reason in that category was given and the approximate percentage within the total number of reasons. Categories for visiting the practitioner are divided into emotional reasons, general information, a specific complaint or issue, diagnostic testing or other action, general prenatal care and other reasons. As can be seen from the examples given, specific complaints were usually that the baby needed adjusting, or moving, or because of pain. Participants reported pain in the lower and upper back and abdomen or belly. Most participants did not specify they went to the midwife for the sobada, instead they gave details on the positioning of the baby. The reasons that participants see a biomedical doctor, however, are for general prenatal care and complaints specific to biomedicine, such as complications from the Rh factor incompatibility, blood pressure problems, and signs of miscarriage. For example, 30 percent of reasons given for visiting a doctor were for a specific issue. Participants gave multiple reasons, so the total percentage well exceeds 100. Table 8.3 displays the categories of actions taken and Table 8.4 gives examples of actions.

<table>
<thead>
<tr>
<th>What Practitioner Did At Visit</th>
<th>Doctor No. (%)</th>
<th>Midwife No. (%)</th>
<th>Sobadora No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>5 (2)</td>
<td>2 (3)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Informational</td>
<td>6 (3)</td>
<td>2 (3)</td>
<td>0</td>
</tr>
<tr>
<td>Treatment</td>
<td>26 (11)</td>
<td>42 (58)</td>
<td>20 (83)</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>193 (81)</td>
<td>17 (24)</td>
<td>2 (8)</td>
</tr>
<tr>
<td>Recommendations</td>
<td>4 (2)</td>
<td>6 (8)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Referral</td>
<td>3 (1)</td>
<td>3 (4)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 8.4. Examples of what each practitioner did at a visit.

<table>
<thead>
<tr>
<th>What Practitioner Did At the Visit</th>
<th>Doctor</th>
<th>Midwife</th>
<th>Sobadora (or other person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>“asked me how I felt”</td>
<td>“convinced me to have the baby”</td>
<td>“talked about beliefs”</td>
</tr>
<tr>
<td>Category</td>
<td>Sample Text</td>
<td>Relevant Text</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Informational</td>
<td>“gave me classes on how to be a mother”</td>
<td>“told me that the pains in my belly were signs of the coming baby”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“saw a social worker”</td>
<td>“explained to me what she was doing and about the correct position of the baby”</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>“gave me medicine (for contractions, pain, infection)”</td>
<td>“adjusted baby”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“gave me vitamins”</td>
<td>“massaged lower back and hips”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“hospitalized me”</td>
<td>“massaged belly”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“vaccine”</td>
<td>“massaged me”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“adjusted the baby”</td>
<td>“massaged sides of stomach”</td>
<td></td>
</tr>
<tr>
<td>Diagnostic</td>
<td>“pregnancy test”</td>
<td>“adjusted the baby into place”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“massaged belly to check the position of the baby”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“urine analysis”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“blood analysis”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“check weight”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“check blood pressure”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“ultrasound”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“glucose test”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“test for anemia”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“test for infection”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“asked about my nutrition”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“measured the belly”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“listened to the baby’s heartbeat”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td>“bedrest”</td>
<td>“recommended rest”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“told me to rest”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Actual practice during a visit is divided into the categories of emotional, informational, treatment, diagnostic testing or other action, recommendations and referrals. Examples of emotional action are talking about feelings or being convinced by the practitioner to keep the pregnancy. Recommendations usually involved bedrest or increased resting. Several women reported midwives advising to perform exercises, such as crawling on all fours and making turns on the bed, to help turn or adjust the baby’s position.

There are different reasons for seeking midwifery, sobadora and biomedical care. The sobadora is sought specifically for the sobada, and all 20 treatments given by sobadoras were sobadas. Likewise, 35 of the 42 treatments given by midwives were sobadas. However, the reasons for seeking midwifery care weren’t usually specifically for a sobada, but more often for a complaint, such as “the baby was lying across my belly.” Other persons who gave massages were the husband (n=2), the husband’s grandmother, a woman who knows how to massage (but is not a sobadora), the participant’s grandmother who was a midwife for many years, and a friend.

These data were elicited from open-ended questions, and some participants were more specific in their answers and provided more information. However, the data underscores the importance of the midwife and the sobadora for addressing specific complaints of pregnancy. At least three-fourths of the reasons given for visiting these two types of healers are for a specific issue.

<table>
<thead>
<tr>
<th>Referral</th>
<th>“recommended vitamins”</th>
</tr>
</thead>
<tbody>
<tr>
<td>“made an appointment with the dentist”</td>
<td>“sent to doctor for pregnancy test”</td>
</tr>
<tr>
<td>“made an appointment with the gynecologist at Regional (hospital)”</td>
<td>“sent to doctor for vaginal infection”</td>
</tr>
<tr>
<td>“sent to hospital”</td>
<td>“sent to hospital”</td>
</tr>
</tbody>
</table>
Each healer’s practice reflects the reasons for visiting that healer. Biomedical doctors do much less treatment in their prenatal care than midwives and sobadoras. Again, this is due to the niche that the latter fill for complaints usually related to malpositioning of the baby. Because of the midwives’ short-course biomedical training, they also incorporate some biomedical diagnostic techniques into their practice. However, traditional midwifery uses the sobada as a diagnostic tool to determine the positioning of the baby. Emotions do not appear to be a significant factor in seeking care, or in the care itself of any of the practitioners. One might expect that midwifery would incorporate more emotional elements, however, these notions are more artifacts of the recent international midwifery movement and is not necessarily a part of the traditional midwifery model of care in Mexico (Davis-Floyd 2002).

Conclusion

To conclude, the practices of both obstetrics and midwifery have a long history in Mexico. Each of them has evolved to a current practice that is uniquely Mexican, despite commonalities with biomedical and midwifery practice worldwide. Midwifery has been devalued over time as a relic of times gone by, representative of ignorance and non-professionalism. This may be changing, however, as the federal and some state governments in Mexico have recently passed laws or policies acknowledging the validity of traditional practices. Obstetrics is the primary source of care during pregnancy and birth, but midwifery and body manipulation continue to be commonplace for addressing specific issues and complaints in pregnancy.

The different biomedical clinics that were observed are all quite similar in that women arrive as a group and can wait for hours on the day of their appointment and the practice is the same: women have their vital signs checked and discuss any issues. The four midwives
presented in this chapter all have varying practices, but share the commonality of having biomedical training. Since most of the midwives practicing in Mexico today receive training, it is likely that most incorporate biomedical elements, such as pitocin, sterilization of instruments, and eyedrops. It has been noted previously that the knowledge from the training does not always get used because the clients and their families do not want it, but now that, too, appears to be changing. The cultural model of a good pregnancy identified in the research showed strong agreement that both biomedical and traditional elements of pregnancy management are desirable and beneficial. It appears that the midwives who continue to practice in Jalisco practice a fusion of biomedical and traditional midwifery, performing mostly those specialized services that lie outside of the authority of biomedicine, such as the sobada and herbal remedies.
CHAPTER NINE: CULTURAL MODEL OF A GOOD PREGNANCY: RESULTS OF CULTURAL DOMAIN ANALYSIS

Freelist: Descriptive Statistics

A total of 53 women participated in the first interview of Phase I, referred to as the freelist interview. Table 9.1 displays descriptive continuous statistics for freelist participants and Table 9.2 gives the descriptive categorical statistics. Age, number of children, site and social class are the only sample characteristics obtained from the freelist sample.

<table>
<thead>
<tr>
<th>Table 9.1. Continuous characteristics for freelist sample with mean and standard deviation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Children</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 9.2. Categorical characteristics for freelist sample with total and percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Site</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Social Class</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Age ranges from 16-76 (\( \bar{x} =35, SD=16 \)). Number of children ranges from 0-9 (\( \bar{x} =3, SD=2 \)). Social class is a government classification for a specified area and, therefore, refers to an aggregate measure of social class for all individuals living in that area, and does not reflect individual social variables. Thus, social class is a different measure from the composite variable socioeconomic status (SES) derived from individual data and created for analytical use with the pregnant sample (Phase II) in this dissertation.
Site and social class are significantly associated ($X^2=51.71, p<.001$). This is not surprising given the government criteria for social class designation as described in chapter seven. None of the ranchitos or cabeceras are designated as upper social class. Figure 9.1 shows the social class distribution among freelist participants according to site. Neither age nor number of children is significantly associated with social class or site.

![Figure 9.1](image)

**Figure 9.1.** Frequency of social class within site for freelist participants.

**Freelist: Analyzing the Terms**

The reduced list of terms from the freelist and open-ended questions used in the pile sort and rating task is shown in Table 9.3 with the Spanish translation. One term that is not on the list but mentioned with some frequency is “hace esfuerzas,” or to exert oneself. After discussing this with my key informants and asking participants to elaborate on its meaning, this item was omitted from the list and more specific examples of exertion were used in its place, such as running/jogging, getting angry, and being frightened. These were the three behaviors
consistently cited by informants and participants as forms of exertion. The table is divided into good and bad categories, although some of the terms (specifically age, mental health and physical health) can be categorized either way. For example, being too young or old is bad, but not being too young and old is good. Having sound mental and physical health is good, but mental and physical problems are bad. Eating acidic foods, a check-up with a midwife, and the sobada were not listed in the freelist, but were included because of their importance discovered in the responses to the open-ended questions.

Table 9.3. Reduced set of terms (n=38) from the freelist and open-ended questions.

<table>
<thead>
<tr>
<th>Freelist Terms</th>
<th>Good</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat well</td>
<td>Alimentarse bien</td>
<td>Drink alcohol</td>
</tr>
<tr>
<td>Take vitamins</td>
<td>Tomar vitaminas</td>
<td>Smoke</td>
</tr>
<tr>
<td>Exercise</td>
<td>Ejercicio</td>
<td>Take drugs</td>
</tr>
<tr>
<td>Attend monthly prenatal appointments</td>
<td>Checar con el médico cada mes</td>
<td>Lift heavy things</td>
</tr>
<tr>
<td>Want the pregnancy/baby</td>
<td>Desearlo</td>
<td>Illness</td>
</tr>
<tr>
<td>Economic security</td>
<td>Seguridad económica</td>
<td>Medicines</td>
</tr>
<tr>
<td>Physical health</td>
<td>Salud física</td>
<td>Blow/hit/fall</td>
</tr>
<tr>
<td>Mental health</td>
<td>Salud mental</td>
<td>Work too much</td>
</tr>
<tr>
<td>Partner support</td>
<td>Apoyo de la pareja</td>
<td>Alcoholic husband</td>
</tr>
<tr>
<td>To be married</td>
<td>Casarse</td>
<td>Age (too old, young)</td>
</tr>
<tr>
<td>Rest</td>
<td>Descansar</td>
<td>Eat acidic foods</td>
</tr>
<tr>
<td>Running/jogging</td>
<td>Correr</td>
<td>Eat food with a cold quality (humoral)</td>
</tr>
<tr>
<td>Have a partner</td>
<td>Tener una pareja</td>
<td>Be frightened</td>
</tr>
<tr>
<td>Family support</td>
<td>Apoyo de la familia</td>
<td>Get angry</td>
</tr>
<tr>
<td>To be calm/tranquil</td>
<td>Estar tranquila</td>
<td>Worry</td>
</tr>
<tr>
<td>Sleep well</td>
<td>Dormir bien</td>
<td>Nervousness</td>
</tr>
<tr>
<td>Checkup with a midwife</td>
<td>Checar con la partera</td>
<td>Eclipse</td>
</tr>
<tr>
<td>A prenatal massage</td>
<td>Sobada</td>
<td>Stress</td>
</tr>
<tr>
<td>Regulate body temperature</td>
<td>Regular la temperatura</td>
<td>Eat cold foods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(temperature)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9.4 gives each term, the order of that term by frequency, the percent of individuals listing that term, the average ranking of that term in each freelist, and the salience of that term. The salience of a term indicates the relative importance and correspondence to the group of terms.
Table 9.4. Reduced set of freelist terms used in pile sort and rating task with percent of people reporting, average rank, and salience.

<table>
<thead>
<tr>
<th>Order by Frequency</th>
<th>Term</th>
<th>Percent People Reporting</th>
<th>Average Rank</th>
<th>Smith’s Salience</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Eat well</td>
<td>77</td>
<td>2.366</td>
<td>0.585</td>
</tr>
<tr>
<td>2</td>
<td>Take vitamins</td>
<td>45</td>
<td>3.167</td>
<td>0.294</td>
</tr>
<tr>
<td>3</td>
<td>Attend monthly prenatal appointments</td>
<td>36</td>
<td>3.053</td>
<td>0.220</td>
</tr>
<tr>
<td>4</td>
<td>Exercise</td>
<td>26</td>
<td>5.357</td>
<td>0.096</td>
</tr>
<tr>
<td>5</td>
<td>Don’t get angry</td>
<td>17</td>
<td>4.222</td>
<td>0.075</td>
</tr>
<tr>
<td>6</td>
<td>Don’t drink alcohol</td>
<td>15</td>
<td>3.625</td>
<td>0.090</td>
</tr>
<tr>
<td>7</td>
<td>Be calm</td>
<td>15</td>
<td>2.375</td>
<td>0.099</td>
</tr>
<tr>
<td>8</td>
<td>Pregnancy wantedness</td>
<td>13</td>
<td>2.714</td>
<td>0.090</td>
</tr>
<tr>
<td>9</td>
<td>Don’t smoke</td>
<td>11</td>
<td>3.500</td>
<td>0.077</td>
</tr>
<tr>
<td>10</td>
<td>Don’t take drugs</td>
<td>11</td>
<td>3.167</td>
<td>0.070</td>
</tr>
<tr>
<td>11</td>
<td>Physical health</td>
<td>9</td>
<td>3.200</td>
<td>0.059</td>
</tr>
<tr>
<td>12</td>
<td>Don’t lift heavy things</td>
<td>9</td>
<td>4.600</td>
<td>0.050</td>
</tr>
<tr>
<td>13</td>
<td>Rest</td>
<td>9</td>
<td>3.200</td>
<td>0.065</td>
</tr>
<tr>
<td>14</td>
<td>Economic security</td>
<td>8</td>
<td>5.000</td>
<td>0.029</td>
</tr>
<tr>
<td>15</td>
<td>Partner support</td>
<td>8</td>
<td>4.750</td>
<td>0.041</td>
</tr>
<tr>
<td>16</td>
<td>Family support</td>
<td>8</td>
<td>6.000</td>
<td>0.021</td>
</tr>
<tr>
<td>17</td>
<td>Don’t take medicines</td>
<td>8</td>
<td>4.750</td>
<td>0.042</td>
</tr>
<tr>
<td>18</td>
<td>Partner</td>
<td>8</td>
<td>2.750</td>
<td>0.064</td>
</tr>
<tr>
<td>19</td>
<td>Mental health</td>
<td>6</td>
<td>4.333</td>
<td>0.026</td>
</tr>
<tr>
<td>20</td>
<td>Sleep well</td>
<td>6</td>
<td>3.667</td>
<td>0.024</td>
</tr>
<tr>
<td>21</td>
<td>Age</td>
<td>4</td>
<td>7.000</td>
<td>0.020</td>
</tr>
<tr>
<td>22</td>
<td>Regulate body temperature</td>
<td>4</td>
<td>7.500</td>
<td>0.006</td>
</tr>
<tr>
<td>23</td>
<td>Don’t have an illness</td>
<td>4</td>
<td>6.000</td>
<td>0.006</td>
</tr>
<tr>
<td>24</td>
<td>Don’t be nervous</td>
<td>2</td>
<td>3.000</td>
<td>0.009</td>
</tr>
<tr>
<td>25</td>
<td>Don’t have a fright</td>
<td>2</td>
<td>11.000</td>
<td>0.002</td>
</tr>
<tr>
<td>26</td>
<td>Medicines</td>
<td>2</td>
<td>1.000</td>
<td>0.019</td>
</tr>
<tr>
<td>27</td>
<td>Don’t have a blow, hit, or fall</td>
<td>2</td>
<td>2.000</td>
<td>0.013</td>
</tr>
<tr>
<td>28</td>
<td>Protect against eclipses</td>
<td>2</td>
<td>5.000</td>
<td>0.004</td>
</tr>
<tr>
<td>BAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Drink alcohol</td>
<td>40</td>
<td>2.429</td>
<td>0.296</td>
</tr>
<tr>
<td>2</td>
<td>Smoke</td>
<td>35</td>
<td>2.389</td>
<td>0.269</td>
</tr>
<tr>
<td>3</td>
<td>Don’t eat well</td>
<td>31</td>
<td>3.188</td>
<td>0.164</td>
</tr>
<tr>
<td>4</td>
<td>Take drugs</td>
<td>27</td>
<td>3.429</td>
<td>0.158</td>
</tr>
<tr>
<td>5</td>
<td>Medicines</td>
<td>27</td>
<td>3.357</td>
<td>0.144</td>
</tr>
<tr>
<td>6</td>
<td>Get angry</td>
<td>27</td>
<td>3.071</td>
<td>0.165</td>
</tr>
<tr>
<td>7</td>
<td>Lift heavy things</td>
<td>19</td>
<td>4.000</td>
<td>0.094</td>
</tr>
<tr>
<td>8</td>
<td>Blow, hit, or fall</td>
<td>12</td>
<td>2.500</td>
<td>0.078</td>
</tr>
<tr>
<td>9</td>
<td>Don’t attend monthly prenatal appointments</td>
<td>12</td>
<td>2.167</td>
<td>0.081</td>
</tr>
</tbody>
</table>
The terms generated by the freelist for “good” and “bad” things for pregnancy can be divided into three general thematic categories: 1) medical/physiological; 2) mental/emotional; and 3) resources/support. Table 9.5 illustrates the categories.

<table>
<thead>
<tr>
<th>Table 9.5. Thematic categories for freelist items.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical/Physiological</strong></td>
</tr>
<tr>
<td>Eat well</td>
</tr>
<tr>
<td>Take vitamins</td>
</tr>
<tr>
<td>Exercise</td>
</tr>
<tr>
<td>Drink alcohol</td>
</tr>
<tr>
<td>Attend prenatal appointment with medical doctor</td>
</tr>
<tr>
<td>Smoke</td>
</tr>
<tr>
<td>Take drugs</td>
</tr>
<tr>
<td>Lift heavy things</td>
</tr>
<tr>
<td>Physical health</td>
</tr>
<tr>
<td>Rest</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Illness</td>
</tr>
</tbody>
</table>
Although the medical/physiological category has the largest number of freelist terms, nine terms related to emotional and mental issues are also frequently mentioned. The inclusion of an emotional grouping of terms in a freelist of “good” and “bad” things for pregnancy reflects an aspect of Latino cultures that many anthropologists have previously noted: emotions are an etiological factor in illness, sickness, and health (Daniulaityte 2004; Finkler 1994b, 2001; Garcia de Alba et al. 2007; Young 1981). Indeed, “getting angry” was the sixth most frequently listed item in the “bad” things list (average rank 3.071) and “not getting angry” was fifth on the “good” things list (average rank 4.222). “Be calm” was seventh on the “good” list (average rank 2.375). Thus, the emotional elements were clearly present in the minds of the women who participated in this exercise. Notably, prompting by the interviewer is inherently absent in a freelisting exercise, thus the presence of the emotional elements in women’s thinking of pregnancy is significant and highlights the importance of emotions in the etiology of pregnancy.

Rural women from both cabeceras and ranchitos, as a group, listed a smaller number of items than either the urban or the semi-urban samples. One possible explanation for this phenomenon is limited sampling in the rural area. The ranchito participants all came from two small ranchitos, both of which are fairly isolated and difficult to travel roundtrip in one day. Because the small number of people living in these ranchitos live their daily lives without much
communication outside of their villages, it is likely they have high agreement in their communal knowledge in most domains. In other words, their small population and isolation could limit diversity and, thus, limit the number of terms generated in the freelist. However, there is another factor that may influence diversity and length of the list. As explained in chapter five, the Ministry of Health has a Centro de Salud, or Health Center in each cabecera, as well as in some of the larger villages. The Health Center is permanently staffed with a doctor and nurses. Smaller villages have a Casa de Salud Rural, or Rural Health House. These health houses are visited biweekly or monthly by a traveling doctor and nurse unit. The Mexican Social Security Institute (IMSS) also has a permanently staffed clinic in some cabeceras. One of the ranchitos in the freelist sample has a Health Center as the only source of biomedical health care. The remaining ranchito has a Health House, The cabeceras have Health Centers and one has both a Health Center and an IMSS clinic. For general primary care, as well as prenatal care, members of these communities must visit the Health Center or House, or IMSS clinic if they have coverage there. Therefore, the people who live in these communities generally have one source of biomedical care and information, limiting their exposure to other ideas and, thus, their knowledge of maintaining a good pregnancy. Furthermore, a characteristic of living in an urban environment is increased exposure to ideas through media such as radio, television, internet, development, tourism, et cetera. Below in Table 9.6 are the spatial distributions of the freelist terms for “good things for pregnancy,” categorized by the identified themes, and divided into lists for each general area (urban, semi-urban, rural). The number in parentheses denotes the rank of the term according to frequency. Only those terms that are in the final list for pile sorts and the rating task are shown. The lists illustrate variation within the sample in what terms were listed by women from the different sites.
Table 9.6. Spatial distribution of freelist terms of good list by theme and site, in order by frequency.

<table>
<thead>
<tr>
<th></th>
<th>Medical/Biological</th>
<th>Mental/Emotional</th>
<th>Support/Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban</strong></td>
<td>Eat well (1)</td>
<td>Want the pregnancy/baby (12)</td>
<td>Partner support (10)</td>
</tr>
<tr>
<td></td>
<td>Take vitamins (2)</td>
<td>Be calm/tranquil (15)</td>
<td>Partner (14)</td>
</tr>
<tr>
<td></td>
<td>Attend monthly prenatal appointments (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercise (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t smoke (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t drink alcohol (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical health (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rest (16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sleep well (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Semi-Urban</strong></td>
<td>Eat well (1)</td>
<td>Mental health (3)</td>
<td>Family support (8)</td>
</tr>
<tr>
<td></td>
<td>Take vitamins (2)</td>
<td>Don’t get angry (4)</td>
<td>Economic security (9)</td>
</tr>
<tr>
<td></td>
<td>Attend monthly prenatal appointments (7)</td>
<td>Be calm/tranquil (5)</td>
<td>Partner support (10)</td>
</tr>
<tr>
<td></td>
<td>Physical health (11)</td>
<td>Want the pregnancy/baby (6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercise (12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t have an illness (14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rural</strong></td>
<td>Eat well (1)</td>
<td>Be calm/tranquil (9)</td>
<td>Partner (14)</td>
</tr>
<tr>
<td></td>
<td>Don’t drink alcohol (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attend monthly prenatal appointments (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Take vitamins (5)</td>
<td>Don’t get angry (15)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t do drugs (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercise (7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No smoking (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t lift heavy things(10)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These dimensions are etic themes created by me and imposed on the freelist distribution to further articulate the differences and similarities in the way the participants think about pregnancy in the different sites. The urban area and the rural cabeceras are very similar to each other in their makeup and ranking of terms. The semi-urban city, on the other hand, has a more diverse and greater distribution of terms across dimensions. It is a transitional city, and should represent an in-between stage in terms of culture change, which it does, but between ranchitos and the urban area, not the rural cabeceras. The Health Centers in the cabeceras have, over time, stimulated an increase in biomedical care and a decrease in midwifery. As fewer people seek the
help of a midwife, fewer women are inclined to enter the trade of midwifery. Midwifery is literally dying out. As discussed above, for primary care and for prenatal care there is the Health Center where everyone sees the same doctors, resulting in hegemony of biomedical knowledge in a single town. Less access to the modern world (e.g., fewer or no cable channels) less internet access, et cetera, also leads to a more homogenized way of thinking. Rural women were also the only ones to list “don’t lift heavy things” in the good list. Not only that, but this term had a rank of ten. This is likely a greater concern to peasant women due to their occupational activities.

The cabeceras are at a peculiar stage of modernization and culture change where individuals accept new concepts and behavior, but are not yet questioning authority. In urban areas, however, where modernization accompanied urbanization, a postmodern approach to health and illness may be taking place in the form of innovation and rejection of technology. Applying the theories of technology adoption lifecycle (Rogers 1962) and paradoxes of technology (Mick and Fournier 1998), it can be postulated that paradoxes, such as competence/incompetence and freedom/enslavement that have been identified in consumer cognition and decision-making in technology adoption and rejection, can lead to an increase in postmodern approaches to the biomedical model. Morris and Venkatesh (2000) discuss how an awareness of limitations in the reductionist, dualistic nature of the biomedical model results in a transitional landscape of illness where the role of mind, emotion, and social processes is recognized by both doctors and patients and can lead to increased consumption in the alternative medical movements. Likewise, Napolitano (2002) describes how an alternative medical movement in Guadalajara has accompanied dissatisfaction with biomedicine.

In my research, participants from the urban area were the only participants to mention negligence of doctors as bad for pregnancy. Several told stories of doctors giving them the
wrong information, or not honoring their choices in childbirth. One woman told how after her baby was born, they told her he was dead. She lay in the hospital for hours thinking she had lost her baby while he was in the nursery during that time. Her opinion of the hospital was that it was not good and the doctors were “negligent.” Another woman said she did not like one hospital and would not return to it because they served her foods with a cold quality after the pregnancy, at the start of the cuarentena, the 40-day postpartum period when a woman should not eat certain foods. In contrast, María Guadalupe, who lives in a very isolated village, described her experience of losing her baby. She and her husband went to the nearest clinic, about 25 minutes by truck from her village, but they would not attend her pregnancy because she had not been to all of her prenatal appointments at the clinic. Under the Ministry of Health system, a woman must attend all prenatal appointments to get care at a specific clinic. María Guadalupe was sent, in the last stages of labor, to the hospital, an additional hour by car down a mountain on a curvy and dangerous road. Her baby was born on the road to the hospital and died before they arrived. Despite the denial of care by the clinic in an emergency situation (she was in the last stages of labor), María Guadalupe did not blame the authority figures, but just accepted that the incident was unfortunate and part of life.

This way of thinking, of accepting authority without question, seems to be more prevalent in a stage of modernization and culture change where the authoritative knowledge of a hegemonic power, such as biomedicine, has superseded the authority of more traditional ways of thinking. In Rogers’ (1962) technology adoption lifecycle model, less educated persons with little capital, and those in more rural areas tend to be the last to adopt technology, including biomedicine. Modernism was accompanied by an acceptance of science and technology as an absolute truth (Morris and Venkatesh 2000). Now, postmodern realities are being accompanied
by an awareness of the individual (Morris and Venkatesh 2000) and rejection of technology is played out in a complicated, transitional landscape of a more holistic approach to decision-making (Mick and Fournier 1998). For example, midwives in Mexico are now entering a new stage of accreditation for a postmodern professionalization that aligns with recent international models of midwifery (Davis-Floyd 2002). Questioning the authority of biomedicine and adopting new approaches is already taking place in health care in Mexico (Napolitano 2002).

Thus, as a population becomes more integrated into a postmodern world society, people begin to question authority, like the women in the urban area who expressed dissatisfaction with their care and rejected the passive acceptance of any biomedical provider as absolute authority.

**Freelist of Social Support**

The freelisting exercise for social support did not generate a large list of terms, therefore, pile sorts, ratings, and consensus analysis were not performed. The information gained from this activity is used to qualitatively supplement other findings. Freelist participants answered the question, “Who helps a pregnant woman?” The most commonly listed terms are shown below in Table 9.7.

<table>
<thead>
<tr>
<th>Table 9.7. Persons listed as support for a pregnant woman.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
</tr>
<tr>
<td>Family</td>
</tr>
<tr>
<td>Other children</td>
</tr>
<tr>
<td>God</td>
</tr>
<tr>
<td>Neighbors</td>
</tr>
</tbody>
</table>

As a follow up to the original question, “Who helps a pregnant woman,” some participants were also asked, “Who is the most important person to a pregnant woman?” The top two people listed were “husband/partner” and “mother.” More participants said the mother was the most important than the husband, however, they usually remarked on the husband’s importance as well. Mother-in-law was listed by some women as most important, and many times was listed as a source of support. However, one woman expressed what several women
also discussed, that it “depended.” She had a “good one because there was little interaction.”

Many mothers-in-law, she said, “try to run the family.” Other women said their mother-in-law had been the biggest help for them, for example helping with the other children. Still others were fervent in their admonition of mothers-in-law. One participant stated that, “If they want to help, they tell you what to do too much…want to run you life. If you anger the mother-in-law, you anger the son. Erase them from the map!” These women tended to have troubled relationships with their mothers-in-law, but the majority of participants welcomed the help during their pregnancies.

In contrast to problems with mothers-in-law were conflicts with a mother. Several participants noted that their mothers did not love them, or that they did not feel loved by their mothers. These women tended to list their mothers-in-law as the primary source of support during their pregnancy. Conflict with mothers appears to derive from conflict about the pregnancy, or the lifestyle of the woman. For a few of the pregnant women in Phase II, their mothers were upset that they were young, pregnant and unmarried and had asked them to move out of the house. These participants were living with their in-laws at the time of the interview. One woman was not young, had several other children, and said her mother visited her once or twice a month, but had never felt that her mother loved her. Instead, she relied heavily on her in-laws for support, who lived next door. Thus, it appears that mother is the primary source of female support for most pregnant women, but in the absence of a loving relationship with the mother, or if the mother is deceased, the mother-in-law typically becomes the primary female source of support.

Family in general is the most important source of emotional support, as well as being a primary source of material and instrumental support. Participants also listed family as a resource
if a pregnant woman needed money, clothes, or food. In addition to family, participants listed friends, compadres, neighbors, and DIF as a source of support in these situations. DIF is a government organization that is somewhat similar to WIC (Women, Infants, and Children) in the United States. DIF provides staple food items such as rice, corn flour, dried beans, sugar, and dried milk. Additionally, some participants listed the doctor, a psychologist, or a social worker if the pregnant woman was having emotional problems.

In Latino cultures, family is the central social unit (DiGirolamo and Salgado de Snyder 2008; Kuznesof 1989). In observing daily life in Ciudad Guzmán and around, I noticed that most women interact primarily with their sisters and sisters-in-law, and even female cousins. They go shopping for groceries and other items together, pick their children up from school together, and go for walks with the children together. Since many people live near or with family members, they interact on a daily basis. Having friends that are not relatives or neighbors is not as common a social relationship as it is in the United States. That is not to say that one does not have acquaintances outside of their families, but that non-familial ties are generally restricted to public interaction, although there are exceptions. The younger generations interact more with non-family members, but once a woman becomes a mother this could cause problems within the family network or be a sign that family relations are not good (Dressler et al. 1986).

**Multi-Dimensional Scaling and Cluster Analysis with Pile Sort Data**

The second interview in Phase I included unconstrained and constrained pile sorts and a 4-point rating task of things pertaining to pregnancy. Twenty-three participants were recruited for pile sorts and a rating task. The interview began with an unconstrained pile sort. The first three areas visited for the pile sorts were the urban, semi-urban, and cabeceras. In the last area to be visited, a ranchito, unconstrained pile sorts were somewhat problematic. Several women
commented that they did not understand what I wanted, including a doctor’s wife. The women in this town are, on average, older than participants in the other areas. As they explained to me, there is no secondary school (grades 7-9) in town, and many of the older children leave to further their education or find work. Therefore, a gap exists between school age children and middle-aged to elderly people. The number of young people and families in the plaza and on the streets was notably scant. Possibly, the age of the participants and lower levels of education are factors in the difficulty these women had with unconstrained pile sorts. The participants repeatedly asked for guidance and instruction, to which the categories of good and bad were suggested. A key informant and I discussed the matter and she explained to me that, in her opinion, inhabitants of the rural areas think in a concrete fashion, as opposed to abstract. Therefore, they were not comfortable producing conceptual categories of their own creation. An analysis of pile sort data with and without responses from these participants does not indicate an overall difference. Despite not prompting the first 15 participants (all except the ranchito) with the suggested categories of good and bad, the data from their unconstrained sorts shows a clear clustering along these dimensions. Data from cluster analysis and multi-dimensional scaling (MDS) are presented for both the first 15 participants who had no trouble with unconstrained pile sorts, and for the entire sample of 23. Data from both groups are presented to illustrate the effect of adding in the ranchito participants. Although the ranchito participants do not dramatically alter the emerging model, there are differences. These will be discussed briefly after the two sets of data are presented.
Figure 9.2. MDS graph with clusters from the unconstrained pile sorts without ranchito participants.

The MDS figures correspond with the findings from cluster analysis, shown in Table 9.8. A high stress value for MDS (>0.15) indicates weak spatial representation of items along two dimensions. The stress value for the MDS of the first 14 participants is 0.08, while the stress value for the MDS with the total sample of 22 participants is 0.06, both low.
The two-dimensional representation of the unconstrained pile sorts reveals a definite pattern, indicating agreement. Although these groups are visible in the MDS, cluster analysis further explores the pattern and improves an understanding of the relationships between terms.

In the cluster analysis of the unconstrained pile sort for the first 14 participants, two large clusters emerge, with five embedded subclusters. Cluster 1 can be defined as “not good for pregnancy” and Cluster 2 as “good for pregnancy.” Several terms are “floaters” and do not merge with a dominant cluster until the analysis approaches the last iteration. These include “prenatal massage,” “check with a midwife,” “age,” “running,” “medicines,” “regulate body
temperature,” “mental health,” and “economic security.” “Prenatal massage” and “check with a midwife” sit by themselves in between the two main clusters, having grouped on the first iteration. Midwives are the primary providers of a prenatal massage, or sobada, and most of the women who seek midwifery care do so for the sobada. Therefore, “sobada” and “check with a midwife” grouped together quickly. The participants did not agree on where the items “age” and “mental health” should go in the pile sort, as each could be interpreted as meaning good or bad, i.e., good mental health is good, or bad mental health is bad. “Running/jogging” is seen by some participants as good because it is a form of exercise, and bad by some participants because it is an exertion. “Medicines” are good if they have been prescribed by a physician, but can be bad if taken without prescription. “Regulating body temperature” is a traditional belief related to the humoral idea of balance between hot and cold. In this case, to regulate body temperature, several women suggested regular bathing, indicating regulation of temperature. A large number of participants inquired as to the meaning of the “regulating body temperature” pile sort card (which, incidentally, was the only card without a photo). It was explained that the term meant to balance the body (or organismo as it was called by the participants). Some participants still hold this traditional belief, and others do not. Thus, these “floater” terms are items for which most participants do not fully agree. For some of these items, opinions have been influenced through culture change, from a traditional way of approaching health to a more westernized biomedical approach.
Table 9.8. Clusters 1 and 2 from unconstrained pile sort with first 14 participants.

<table>
<thead>
<tr>
<th>CLUSTER 1: NOT GOOD FOR PREGNANCY</th>
<th>CLUSTER 2: GOOD FOR PREGNANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional/Stress</strong></td>
<td><strong>Nutrition/Health</strong></td>
</tr>
<tr>
<td>Angers</td>
<td>Eat well</td>
</tr>
<tr>
<td>Fright</td>
<td>Physical health</td>
</tr>
<tr>
<td>Worry</td>
<td>Humorally cold foods</td>
</tr>
<tr>
<td>Stress</td>
<td>Cold temperature foods</td>
</tr>
<tr>
<td>Nerves</td>
<td>Acidic foods</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td><strong>Medical Care</strong></td>
</tr>
<tr>
<td>Eclipse</td>
<td>Check with doctor</td>
</tr>
<tr>
<td><strong>Physical/Abuse</strong></td>
<td><strong>Well-Being</strong></td>
</tr>
<tr>
<td>Drink alcohol</td>
<td>Emotional</td>
</tr>
<tr>
<td>Smoke</td>
<td>Family support</td>
</tr>
<tr>
<td>Take drugs</td>
<td>Want the pregnancy</td>
</tr>
<tr>
<td>Blow/hit/fall</td>
<td>A partner</td>
</tr>
<tr>
<td>Alcoholic husband</td>
<td>Be calm/tranquil</td>
</tr>
<tr>
<td></td>
<td>Partner support</td>
</tr>
<tr>
<td></td>
<td>Be married</td>
</tr>
</tbody>
</table>

As seen in Table 9.8, in the cluster analysis with the first 14 unconstrained pile sorts, cluster 1 contains 11 items that are “bad for pregnancy” and that combine approximately two-thirds of the way into the analysis to form one cluster. Within this cluster, there are two subclusters. One is labeled the “emotional/stress” cluster. Terms in this group are “get angry,” “be frightened,” “worry,” “stress,” and “nervousness.” In between the subclusters is “eclipse,” which eventually combines with the other two subclusters. The second subcluster is labeled “physical/abuse.” It contains “drink alcohol,” “smoke,” “take drugs,” “a blow/hit/fall,” and “alcoholic husband.”

Cluster 2 contains items that are “good for pregnancy.” There are three main subclusters that appear within this cluster. Thematically, they are described as “nutritional/health,” “support/emotional well-being” and “physical well-being.” Terms that fall into the nutrition/health subcluster are “eat well,” “physical health,” “cold foods humoral,” “cold temperature foods,” “acidic foods” and “take vitamins.” Emotional and physical well-being combine early in the clustering to form one large “well-being” group. Emotional well-being
includes “family support,” “want the pregnancy/baby,” “a partner,” “be calm/tranquil,” “partner support” and “to be married.” Physical well-being includes “exercise,” “rest” and “sleep well.” “Check with the doctor monthly” (i.e., attend monthly prenatal appointments) floats between the two subclusters in Cluster 2. Eventually, all items combine to form Cluster 2.

Analysis of the unconstrained pile sort data with 22 participants shows little difference from the first 14 participants, who did not have trouble understanding how to do the unconstrained pile sort. The main effect of adding the ranchito participants into the analysis was that it divided the terms into two definitive groups without showing clear subclusters. The cultural domain analysis reflects their beliefs about the benefits of midwifery and the sobada, food proscriptions, and eclipses. These eight participants were prompted to use the “good” and “bad” categories when pile sorting, thus restricting the sorting into two categories, therefore, the division of the terms into two groups for the whole sample is not surprising. The ranchito participants’ sorting demonstrates some of the more traditional practices and thoughts regarding pregnancy. “Cold temperature foods” and “acidic foods” moved more toward the middle of the cluster analysis away from the “good” category, indicating less agreement in the group overall, but also supporting the traditional idea that these foods are not good for pregnancy. Without the ranchito participants, “cold temperature foods” and “acidic foods” are in the “good for pregnancy” group. During the freelisting exercises, cold and acidic foods were listed as bad because cold temperature foods can cause the baby to be born with a stuffy nose and respiratory problems and acidic foods can cause heartburn. However, cold temperature foods, like ice cream, were viewed as good by the non-ranchito participants because they gave some relief to the increased susceptibility to heat experienced by many pregnant women. Acidic foods were viewed as beneficial because they are thought to be high in vitamin C. In contrast, the ranchito
participants maintained the traditional proscriptions to these foods. Also, “check with a midwife” and “prenatal massage” moved closer to the good group when the ranchito responses were included in the cluster analysis, although they are still floaters and do not belong in any subcluster. This is due, in part, to the age of the ranchito participants who have a more traditional lifestyle.

A factor in the community’s continued belief in the benefits of midwifery and the sobada could be related to the distance from the nearest hospital or clinic. From this particular ranchito, El Guayabo, the nearest hospital, is now only an hour and a half drive by truck, but until the road was paved six years before, the drive had taken three hours by truck and the road was not paved and treacherous according to several of the El Guayabenos. Thus, midwives enjoyed a more lucrative practice when birth seemed imminent and the drive was too long and uncomfortable. In fact, the local doctor who practices out of his home says he delivers two or three babies a year to parents that did not have time to get to the hospital.

The unconstrained pile sort data of “good and bad things related to pregnancy” reveal clear dimensions based on what is good or bad for pregnancy. Furthermore, other dimensions are found within these two main groupings that highlight the importance of both the physical and the emotional in Latino thinking of illness, sickness, and health. Not only can emotions themselves be causal factors in helping or harming a pregnancy, but emotional well-being is linked to social support. Cluster analysis shows that the participants view partner and family support as very important elements in maintaining a good pregnancy. The freelist exercise for social support during pregnancy supports these findings. Mother, family, and partner were consistently listed by the participants in the freelist. Family, or family support, influences physical well-being as well by moderating the effects of stress on the immune system, and
directly modifying perceived stress and pregnancy-related anxiety (Coe and Lubach 2001; Cohen 2001). Phase II results address this issue.

**Consensus Analysis**

Constrained pile sorts were also carried out with a total of 23 participants in Phase I. Participants were told to sort the cards into two piles: “good for pregnancy” and “bad for pregnancy.” To convert this into a rating task that would yield a 4-point scale, participants were then told to subdivide the two piles into “Always good/necessary,” “Good, but not necessary,” “Sometimes bad” and “Always bad.” These results were entered into consensus analysis in Anthropac 4.0 (Borgatti 1996a). Three participants’ responses were not included in the consensus analysis for various reasons including not performing the ratings task and being influenced by a neighbor, yielding a total of 20 completed pile sorts and rating tasks.

Results from consensus analysis (principle components analysis) with Anthropac 4.0 (Borgatti 1996a) of Phase I data support the existence of one shared cultural model of a good pregnancy, with very strong agreement. The model contains elements from both bio-obstetrics and ethno-obstetrics, demonstrating a clear melding of the two systems in the cognitive domain of pregnancy. A ratio of 3.0 of the eigenvalue of the first factor to the eigenvalue of the second factor is considered adequate to represent agreement. The ratio from consensus analysis is 19.5, and the average competence (i.e., the Pearson correlation coefficient of each respondent to the whole group) of the group is high at 0.86 (SD=0.11). Cultural consensus model results for the same task in Phase II (n = 88) reveal strong agreement among the pregnant sample as well, thus validating the model identified in Phase I. For the Phase II sample, the ratio of the first factor to the second is 18.7, and average competence is 0.82 (SD=0.06). Table 9.9 gives the items of the CCM divided into good and bad. The items are ordered by the weighted score from the answer
key in consensus analysis. The 4-point scale was coded as 0=always good, 1=sometimes good, 2=sometimes bad, 3=always bad. Anthropac produces an answer key for the consensus items based on the weighted averages from the ratings. Items are good if they received a rating of 0-1.49, with 0 being the best or necessary for a woman during pregnancy. Items are bad if they received a rating of 1.5-3.0, with 3 being the worst for a woman during pregnancy. Those items that are the best and worst are considered the most important, therefore, the table ranks the items from most to least important.

<table>
<thead>
<tr>
<th>GOOD</th>
<th>Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monthly prenatal appointment</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Pregnancy wantedness</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Eat well</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Stay calm</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Sleep well</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Physical health</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Take prenatal vitamins</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Rest</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Partner support</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Family support</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>Economic security</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>Partner</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>Cold quality foods</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Be married</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>Sobado</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Regulate body temperature</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Visit a midwife</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>Acidic foods</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>Running/Jogging</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>Cold temperature foods</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>Medicines</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>Mental health</td>
<td>1.37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BAD</th>
<th>Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Drugs</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Smoking</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Alcoholic husband</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Blow/Hit/Fall</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>Alcohol</td>
<td>2.90</td>
</tr>
<tr>
<td></td>
<td>Getting angry</td>
<td>2.70</td>
</tr>
<tr>
<td></td>
<td>Lifting heavy things</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>Fright</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>Nervousness</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>Illness</td>
<td>2.58</td>
</tr>
<tr>
<td></td>
<td>Stress</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>Worry</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>Work too much</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>Eclipse</td>
<td>2.29</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>1.55</td>
</tr>
</tbody>
</table>

The pile sort cards had pictures to go along with the terms on each card. This was done in anticipation of illiteracy in the more rural areas. However, the pictures may have influenced the rating of some of the items. Specifically, cold quality foods and acidic foods had pictures of fresh fruits and vegetables with those characteristics. I think participants may have looked at the
pictures and related them to eating well because they were fresh fruits and vegetables, instead of relating them to the bad qualities that were listed in the freelist.

**Figure 9.4.** MDS graph with clusters and PROFIT line (N=20).

PROFIT analysis, a test of underlying dimensions, has an r-square of 0.97. The closer the r-square is to 1.0, the closer the relationship of the PROFIT line to the values of the attributes on the map (Borgatti 1996b), in this case the attribute is good–bad. Therefore, PROFIT analysis demonstrates a clear fit between the dimensions identified through MDS and cluster analysis with the unconstrained pile sorts and consensus on the good–bad attribute elicited in the rating task. The cosines (-1.0, 0.07) dictate that items that are more “good” are located west and north
on the map. The cosine for the x-axis is larger than the cosine for the y-axis, indicating the most “good” items are located more west than they are north.

The model consists of both biomedical and traditional elements and exhibits variation along the biomedical and traditional dimensions. Examples of biomedical elements are monthly prenatal appointments, taking prenatal vitamins, avoiding smoking, alcohol, drugs and unprescribed medicines. Traditional elements are those elements that reflect traditional Mexican culture and are not ambiguous or part of a biomedical model of prenatal care. Categorization of the items was informed by previous ethnographic literature and current fieldwork. Traditional elements of the model are, among other items, the benefit of a sobada, visiting a midwife, regulating or balancing body temperature, taking precautions during an eclipse, avoiding foods with a cold humoral quality, and being cautious with emotions that could have negative effects, such as getting angry, nervousness, worry and being frightened (see Table 9.10). There are other components of the model that are ambiguous, meaning they are not strictly biomedical or strictly traditional. Examples include avoiding lifting heavy objects and eating well. Additionally, alcohol, drugs, and smoking are placed in the biomedical category because they are part of the biomedical model of care that has been adopted by other models. Furthermore, substance abuse is largely seen as a product of westernization of traditional cultures, therefore, was likely a focus of biomedical care before it was integrated into midwifery care. Table 9.10 shows those elements of the model that are biomedical, traditional, and ambiguous.
Consensus among the participants supports a model in which traditional elements are important in maintaining a good pregnancy. Therefore, traditional elements are culturally an important aspect of total prenatal care for women in the sample and are notably both emotional and physical. A western biomedical model of care does not typically include emotions in disease etiology. Given that biomedicine is a cultural artifact characteristic of the culture in which it is employed, Mexican obstetrics may promote a more emotional and physical prenatal care than obstetrics in the United States (see Finkler 2001). Data gathered from pregnant participants in Phase II on what happens during a doctor’s visit and a midwife’s visit shows that most of the visits do not include questions or discussions of emotions or feelings.

**Understanding the Items of the Cultural Consensus Model**

A common and ubiquitous conception about pregnancy is that everything the mother experiences while pregnant passes to the baby (*todo que pasa al mama, pasa al bebe*). Usually this refers to emotions and illnesses. For example, anger, frights, and nervousness on the

<table>
<thead>
<tr>
<th>Biomedical</th>
<th>Traditional</th>
<th>Ambiguous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend monthly prenatal appointments</td>
<td>Be calm</td>
<td>Don’t lift heavy objects</td>
</tr>
<tr>
<td>Take prenatal vitamins</td>
<td>Family support</td>
<td>Eat Well</td>
</tr>
<tr>
<td>Don’t drink alcohol</td>
<td>Don’t get angry</td>
<td>Don’t have a blow/hit/fall</td>
</tr>
<tr>
<td>Don’t take drugs</td>
<td>Don’t eat cold foods (quality)</td>
<td>Don’t work too much</td>
</tr>
<tr>
<td>Don’t smoke</td>
<td>Don’t be nervous</td>
<td>Don’t have an alcoholic husband</td>
</tr>
<tr>
<td>Don’t take medicines</td>
<td>Don’t be frightened</td>
<td>A partner</td>
</tr>
<tr>
<td></td>
<td>Visit a midwife</td>
<td>Sleep well</td>
</tr>
<tr>
<td></td>
<td>Don’t eat cold foods (temperature)</td>
<td>Be married</td>
</tr>
<tr>
<td></td>
<td>Protect against eclipses</td>
<td>Mental health</td>
</tr>
<tr>
<td></td>
<td>Regulate/balance body temperature</td>
<td>Physical health</td>
</tr>
<tr>
<td></td>
<td>Don’t worry</td>
<td>Running</td>
</tr>
<tr>
<td></td>
<td>Sobada</td>
<td>Exercise</td>
</tr>
<tr>
<td></td>
<td>Don’t eat acid foods</td>
<td>Want the baby/pregnancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Don’t have an illness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Partner support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Don’t have stress</td>
</tr>
</tbody>
</table>

Table 9.10. Biomedical, traditional, and ambiguous elements from the shared cultural model of a good pregnancy.
mother’s part are transferred to the fetus and can affect the baby after it is born. In the interviews from Phase I, participants frequently cited emotions (sentidos) as something that could negatively impact the pregnancy and the unborn baby. The one emotion that was cited more than any other is anger (coraje). If a woman becomes angry (pasa corajes or se enoja) often during pregnancy, or has an intense anger episode, the baby can be born with a variety of problems. Participants said it was very important to control emotions (cuenta mucho el estado de animo). If a woman has emotional problems, she will have problems with the pregnancy.

Although there is consensus that anger and other emotions and experiences have an effect, there is less agreement about how the baby and pregnancy are altered. Folk knowledge of the traditional elements of the model varies considerably, unlike knowledge about the biomedical elements. Variation does exist in biomedical practice and beliefs among doctors (e.g., Baer et al. 2004). However, biomedical practice is upheld by other media besides doctors. Television, radio, and other avenues for advertisement relay messages such as alcohol, drugs, and smoking are bad for the pregnancy. Like the traditional elements, women may not know how these things affect the pregnancy and baby, but there is agreement they are bad. All reproductive health facilities and practitioners, both biomedical and traditional, give pregnant women the similar, if not uniform, instructions on the biomedical elements. Traditional knowledge does not come from the authority of science and medicine, but is anecdotal. It is a cultural phenomenon then, that there is agreement on reproductive health beliefs that do not come from a source such as a textbook. A brief description of each of the 38 items that were included in the pile sorts is given below.

As stated above, most women believe that anger can cause the baby to be born with problems (el bebe sale mala). Not becoming angry (no pasa corajes) appeared with high
frequency in the good freelists, in addition to anger being listed frequently in the bad lists. Being calm (*estar tranquilo*) was also listed frequently on the good list. Several women said they knew anger was bad, but did not know how. The most common effect is that the baby will have an angry disposition (*sea corajudos* or *sale biliosos*). They may also cry a lot when born (*muy lloronos*), be aggressive or nervous, or have a strong character, not behave well, be born with low birth weight, be susceptible to illnesses, have high blood pressure, be born yellow (*amarillo*), or even have diabetes. It can also cause the baby not to sleep well and to have little appetite, sometimes not wanting to breastfeed. The mother is also affected by anger, which can cause her to vomit, lose her appetite, have pains or contractions, high blood pressure, or headaches and sometimes results in a miscarriage. The miscarriage may be accompanied by loss of a large amount of blood. One woman in Ciudad Guzmán said a relative of hers lost a baby because she had a strong anger episode. Several women said anger did not affect the baby and one participant in Guadalajara even said the anger can affect the mother, but the baby eats the anger and adapts to avoid the effects.

According to many of the respondents, anger, fright (*sustos*), nerves (*nervios*) and worry (*preocupación*) can have similar effects during pregnancy. Other women cited peculiarities unique to a jumpy (*asustada*) or nervous (*nerviosa*) mother. In general, most people agreed that a woman who is easily frightened or has a strong fright during pregnancy will give birth to a baby who is also easily frightened, nervous, and cries a lot. A fright can also raise the baby’s blood pressure (*sube el presion*). The baby may be born with a bad heart and prone to attacks of nerves (*ataquitos de nervios*). Like a strong anger episode, a strong fright can cause a miscarriage. A nervous mother can give birth to a baby who is nervous and easily frightened, as well, or may have high blood pressure, low blood pressure, be aggressive, hyperactive, have
stunted growth, be discontented, sad, or angry, have a brain defect, not sleep well, or cry a lot. A nervous mother can be aggressive, have frequent attacks of nerves, suffer from insomnia or not sleeping well, have a lack of appetite, and high blood pressure. One woman in Ciudad Guzmán said if the mother has worries (penas), frights, nerves, or anger, the baby can be born with hepatitis, yellow (i.e., jaundiced), or with welts (ronchajitos). Another respondent said that nerves and frights can cause the baby to be born with nerves, illnesses, swollen red splotches on the skin (bolitos), or the babies can be born sick, with Down Syndrome (mongolitos), problems with their brains, or even stillborn. A number of women listed mental health as bad, and other listed mental health as good. This was explained as mental problems are bad because the baby can be born with mental problems. Also, mental problems such as depression and anxiety are similar to the emotional states described above and can have maladaptive effects for the baby. Stress works similarly and was listed as bad for the mother and baby.

Pregnancy wantedness is another element of the CCM that is linked to the emotions. Doctors and midwives, as well as participants, said not wanting the baby can affect how well the pregnancy progresses. Most participants said the baby can sense if the mother does not want it, because all thoughts and emotions pass to the baby. Furthermore, a mother is more likely to mistreat a child if she did not want it. Not wanting the baby can cause it to be born with low birth weight. Closely linked to a woman’s emotional state is her social support network and having a partner. Many respondents said that support from a woman’s family is extremely important in helping her emotionally, materially, and instrumentally. Economic security was listed as good for pregnancy because a woman does not have to worry about feeding her family, et cetera. Families are sources of economic security, but a partner with a job is the most important source. She will eat better if she has support from her female relatives, namely
mothers, sisters, and mothers-in-law. They also provide assistance with other children, cooking, and cleaning. Opinions varied widely on whether the mother-in-law (suegra) provided good support. A respondent’s personal relationship with her own mother-in-law seemed to influence her comments more than anything else. Some women said their mother-in-law was the biggest help, others said not at all. One participant in Guadalajara said she had a good one because she did not try to interfere in her family life. On two occasions, once in Guadalajara and once in Ciudad Guzmán, I listened as a pair of women spent no less than five minutes discussing the evils of mothers-in-law. Fathers were also listed as important sources of family support, but one participant said they can get jealous and angry when their daughters get pregnant. She recounted the story that the father of her daughter-in-law became angry with his married daughter when she had her first baby. They did not speak for four years.

A family life (vida familiar) is even more essential to the well-being of a single woman. Being single (soltera) is viewed as undesirable. However, if a woman’s partner is unsupportive, unemployed, mistreats her, or is an alcoholic, it can be damaging to her emotional state, as well, causing her to become angry. Some women felt that being married was important because “a boyfriend does not give much support, but a husband does” (el novio no da mucho apoyo, pero el esposo sí). One older woman of 70 years in Ciudad Guzmán said that the man does not have as important a role today as he did in the past (El hombre no tiene una parte importante como en el pasado. En el pasado tenía una gran parte.). Other women noted that if a woman is not married, the man is more likely to leave.

Sometimes a family, especially a woman’s mother, is so upset with her unmarried daughter for being pregnant that she abuses her, especially if she is a teenager. Age appeared in the freelists because a woman should be a “good age” (defined as 27 or over by one young
woman) to become a mother. Too young (jóven) and too old (vieja) can be bad for a variety of reasons. A woman who is too old can have a baby with Down Syndrome or have other complications. A young girl may have complications with both the pregnancy and with life because she is losing her childhood and becoming a young mother. Several participants discussed teenage pregnancies as being a big problem today, along with drug and alcohol abuse, and attributed this phenomenon to the breakdown of the family and lack of communication between the family. A gynecologist in Ciudad Guzmán told me that a lot of young women (muchachas) get pregnant in high school and drop out because of discrimination due to their pregnant status. The legal marriage age, according to the doctor, is 16 for girls and 18 for boys. The couples drop out and do not get married and, if the couple stays together, the boys go to work.

The elements of the model that a woman hears from her prenatal caregiver were listed often. These include eating well, taking prenatal vitamins, attending monthly prenatal appointments with a doctor, and avoiding drugs, alcohol, smoking, and lifting heavy things. Alcohol, smoking, and drugs are cited as causing birth defects and low birth weight. From my own observation, smoking and drinking among women is not as common in Mexico as in the United States. Drinking alcohol is usually reserved for special occasions, such as weddings and birthday parties. Most women appeared to drink in moderation at these events. One common practice in the ranchitos and outskirts of small towns and cities is the drinking of leche caliente early in the mornings. Literally, this translates to “hot milk”. To drink leche caliente properly, one first puts crushed chocolate and sugar in the bottom of a cup and saturates that with mescal (the alcoholic beverage created in the first distillation process of tequila-making). The cup is then held underneath a cow udder and fresh, warm milk is squeezed from the udder directly into
the cup. An individual usually drinks one or two cups once a week, more or less. The amount of alcohol is generally minimal, although this depends on who is pouring the mescal. This practice appears to continue during pregnancy in the rural areas.

Lifting heavy items can cause a miscarriage. It is noteworthy to mention that this item appears most often on the lists of the women in the rural areas. Peasant lifes in the rural areas requires heavy lifting during daily household tasks, such as washing clothes in rivers or cisterns, carrying heavy loads of groceries for longer distances, and carrying buckets of soaked corn to be ground in the morning for tortillas. A blow, hit, or fall (golpe) can cause a miscarriage, or contractions that threaten a miscarriage.

Taking vitamins was listed very often by participants. Many times, women specifically listed folic acid, iron, and calcium. These are the vitamins a woman gets from the Health Centers through the Ministry of Health. All women get folic acid, but only those who are at risk for calcium or iron deficiencies receive those vitamins. IMSS and private doctors prescribe a prenatal multi-vitamin in addition to folic acid. Women who take a multi-vitamin without a prescription pay out-of-pocket for the vitamins. Attending monthly prenatal appointments is important for receiving prenatal care, getting vitamins and ultrasounds, and checking to make sure everything is okay.

Eating well appeared at the top of the good list in all regions, as well as in discussions with midwives and doctors. Two of the midwives asked to do a freelist cited eating well as very important, adding that too much flour, fat and junk food is bad. The oldest midwife I spoke with said there were no foods that were bad and it was more important for a woman to eat. A common response in the freelists regarding eating well was to eat things that are nutritious (lo que es nutritiva). Without prompting for good and bad foods, only good and bad things,
participants listed as good the following: fruits, vegetables, cereals and grains, legumes, beans, milk, tortillas, chicken, fish, beef, rice, garbanzo beans, *atoles* (thick, creamy drinks made from milk and a grain such as corn or oats), lentils, poultry, soups, *sopas* (rice and vegetable dishes), and rice with milk. The freelists of bad things yielded lists of foods as well, some of which appear on the good lists, illustrating considerable variation in beliefs. Foods cited as bad are generally not good in excess, although moderate amounts may be okay. Those listed in the freelist of bad things for pregnancy are as follows: flour, milk, eggs, fish, soft drinks, fats, pork, beans, tortilla, bread, salt, rabbit, spices (*condimentos*) The general agreement was that *condimentos* include the following: dried oregano, marjoram, whole or ground pepper, bay leaves, cloves, garlic, and ginger.

In the freelists, foods with a cold quality (according to humoral theory) were listed as bad during pregnancy by some women. However, there was considerable discrepancy in this belief as many women stated that avoiding cold quality foods is not as important during pregnancy as it is after pregnancy during the cuarentena. Furthermore, some women said this was an outdated belief that most people do not adhere to anymore. Pork, rabbit, and dove (*pichón*) are cold meats that some women said should not be eaten. Cucumbers, cactus (*nopal*), avocados, potatoes, watermelon, and squash are a few of the fruits and vegetables listed as cold, although one woman said almost any fruits are cold. Cold temperature foods were also listed as bad by some women (mostly in rural areas) because they can cause upper respiratory problems (*afecta por gripe*) or sinusitis for babies, or make them cold (*helado*). In the pile sorts, however, there was considerable disagreement on this as some women said cold foods, like ice cream, were a great relief from heat to a pregnant woman carrying twenty-five extra pounds of baby weight. Acidic foods were listed as bad in the freelists in the rural areas because they can cause the baby to have
a headache (el bebe duele en la cabeza). With the consumption of a lot of acidic foods, the baby may be born with a migraine headache (migraña). Acidic foods include green mangos and guava. In the pile sorts, there was considerable disagreement. Some women said acidic foods contain vitamin C, which is beneficial during pregnancy.

Regulating body temperature, like eating cold quality and cold temperature foods, is related to the humoral theory of hot–cold. Several women said it was good to bathe daily to maintain a temperate or lukewarm (templada) state.

Exercise was listed as a good thing by some women, but as bad by other women. The difference is found in whether the exercise is mild, such as walking or whether it is an esfuerza, or forceful exertion. Examples of esfuerzas given by participants as running or jogging, lifting heavy things, dancing, a strong anger episode or fright, heavy mopping, too much laundry, and heavy housework. One woman in the ZMG said that exercise is good because it keep the blood circulating. Another woman in Ciudad Guzmán played basketball until she was five months pregnant with each of her three pregnancies. She felt it kept her in good condition for labor.

Similar to exercise is physical health. In the freelists, physical health was listed as good for pregnancy because it is important to be in good physical health. Sleeping well and resting are both important in maintaining good physical health during pregnancy. They are also important for mental health. Several women said that having a job is good for economic security, but working too much is not good because the woman will not have time to rest or eat well, and may be stressed. Illnesses were listed as bad because they can affect the baby. Chronic illnesses such as diabetes were given as examples because they are thought to be inherited. Acute illnesses can cause complications with the pregnancy. Medicines were listed as bad by some women and good by others. Taking medicines that have not been prescribed or that are unidentified are bad,
but taking medicines prescribed by a doctor (or other practitioner) are good, probably because they are treating an illness. To further complicate understanding the relationship of medicines and pregnancy is the fact that some women classify vitamins as medicines. Therefore, some women think of medicines as good because they are thinking of vitamins.

In the freelists, midwives were listed by some women as good for a pregnancy, mostly in the rural areas. When asked about the benefit of midwives in an open-ended question, quite a few respondents from the urban area said that there were no more midwives, they did not personally know any, and some even said they were bad. One woman in Ciudad Guzmán said that hospitals are better protection than midwives. Several women said no one used midwives for birth anymore, just during the pregnancy. In a discussion with women from Ciudad Guzman, I was told that midwives massage and turn the baby during pregnancy, and doctors deliver the babies. One middle-aged (58) woman in Ciudad Guzman had seven of her nine children with a midwife and said they provided good care, but thinks that a lot of women get uterine and cervical cancer because they did not take care of themselves or get good care during pregnancies. She was referring to a lack of biomedical prenatal care. A woman in a ranchito told me her sister died after having her baby with a midwife who she claimed did not wash her hands. An upper-class, well-educated new mother in the ZMG said she had inquired at IMSS about where she might find a midwife and was told there are no midwives. This particular woman desired a natural birth. Also in the ZMG, a woman told me that the television told her midwives can cause a miscarriage. The sobada, or prenatal massage, was listed more often than midwives as good during pregnancy. In the ZMG, one woman told me that people say the sobada is bad. Most of the freelist respondents from the ZMG had not received a sobada during pregnancy, even those
from Tonala. In Ciudad Guzman, the cabeceras, and ranchitos, however, it was common for women to have had a sobada with at least one of their pregnancies.

An eclipse can cause a variety of problems, the most commonly cited being a baby born with a cleft palate. During an eclipse it is advisable to stay indoors and wear something red or metal (preferably silver) whether indoors or outdoors. Women reported attaching safety pins inside their pants or underwear, but others had more unusual solutions, such as stringing keys or taping coins across their stomachs. Generally, tying a red sash around the waist or wearing a red belt is considered sufficient. In one village, however, I was told of a woman who had covered herself in red crepe paper and walked through the village all day making a swishing sound. I had a lengthy discussion with one woman about how not protecting against an eclipse caused her niece to miscarry. She also reported that another woman who did not protect herself had a baby born with a “closed” stomach, requiring surgery when it was born. One participant said her husband was afraid the eclipse would eat up the baby. At least five participants stated they did not personally believe in the bad influence of the eclipse, but that either their husbands, mothers-in-law, or mothers compelled them to wear something silver or red to protect themselves.

**Examining Variation Within the Model**

To assess variation among subgroups within the model, at least 20 informants per subgroup is recommended (Weller 2007). Phase I had 20 participants total, thus a highly reliable assessment of subgroup variation is not possible. Nonetheless, variation within the model of the total group does reveal several tendencies. Age of the participants in the Phase I ratings task ranged from 14-72. Variation in cultural competence scores in Phase I is not significantly associated with age, social class, or site. There is a weakly significant trend for older women to be more competent and knowledgeable than younger women ($r=.39, p=.097$) (see Figure 9.4).
Phase II participants are all of reproductive age and, therefore, do not have similar age variation in the sample. Thus, this trend does not show up in the pregnant sample.

Figure 9.5. Scatterplot of age and competence scores for Phase I consensus analysis.

A summary score was derived for each individual in Phase I to reflect the number of traditional elements (n=13) each participant sorted “correctly” (see Table 9.9 for a list of the items and ratings). A card was sorted correctly if the sorting coincided with the resulting cultural consensus model. If a participant sorted this card into the good pile, then that participant was given one point.

Site and social class are both significantly associated with traditional scores [F=6.43, p=.01; F=5.40, p=.02], respectively. However, site and social class are also associated with each other (X^2=51.71, p<.001). The small sample size of the rating task limits the application of higher order statistical analyses, therefore, only bivariate analyses can be performed with the ratings data. The ranchitos are primarily comprised of the lowest social class category, meaning ranchitos have the lowest standard of living. Age is also significantly positively associated with
the traditional score \((r=.59, p=.01; \text{see Figure 9.5})\) and may be a factor in knowledge and competence of the traditional elements of the model.

![Figure 9.6. Scatterplot of age and traditional score for Phase I cultural domain analysis.](image)

The oldest participants, those over age 40, tend to have the highest cultural competence scores, meaning they are the most knowledgeable and competent in the model. Furthermore, being older is significantly associated with knowing the traditional elements of the model. Considering that the complete model of a good pregnancy includes both traditional and biomedical elements, the most knowledgeable participants would have both types of elements in their own cognitive schema. Therefore, older women include more traditional elements in their models, and, thus, age accounts for a portion of the variance in the general sample. The participants in the ranchito, the poorest area, are also the oldest participants in the study. The ranchito participants in the ratings task also have a more traditional way of thinking, therefore, it is difficult to determine the relationship of age, site and social class with cultural competence.
scores and analysis of traditional and biomedical variation in the model. Analysis is limited by sample size for the pile sorts and the rating task.

Conclusion

Cultural domain analysis was carried out with 73 participants total. Fifty-three women of all ages, social classes, and from four different types of municipalities participated in the freelist, and 23 women participated in a pile sort and rating task. Multi-dimensional scaling and cluster analysis demonstrate the blending of both tradition and biomedicine in the cultural model. Although both analyses reveal the importance attributed to physical and emotional factors in the etiology of pregnancy, showing their grouping in subclusters, there is no sub-delineation according to tradition or biomedicine. Furthermore, familial social support is an important aspect of a good pregnancy. Consensus analysis was performed in Anthropac 4.0 (Borgatti 1996a) and a shared cultural model of a good pregnancy was supported. The cultural consensus model contains biomedical, traditional, and ambiguous elements. Cultural competence scores show a tendency for older women to be more knowledgeable in the model. People living in ranchitos and of lower social class tend to know more of the traditional aspects of the model than do others, but, again, there is only one consensus model that clearly shows a current melding of tradition and biomedicine. The small sample size limits extensive interpretation of the variation within the model.
CHAPTER TEN: SAMPLE CHARACTERISTICS OF PHASE II: PREGNANT PARTICIPANTS

Individual Characteristics

Phase II has a sample size of 88 participants, all of whom were pregnant at the time of the interview. Although the intent was to only interview women at or past 28 weeks of pregnancy, opportunistic sampling occasionally led to an interview with a participant who was earlier than 28 weeks into pregnancy. All interviews are included in the analysis. Demographic data for individuals are displayed for the continuous variables in Table 10.1 and the categorical variables in Table 10.2. Data for household characteristics are found in Tables 10.4 and 10.5, pregnancy characteristics are in Tables 10.6 and 10.7.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\bar{x}$ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>25.7 (6.3)</td>
</tr>
<tr>
<td>Education (years)</td>
<td>8.6 (3.6)</td>
</tr>
</tbody>
</table>

The age range of the pregnant sample is 14-41. As only pregnant women were included in the research design for Phase II, the age of the participants is limited to reproductive age. Fifty percent of the sample is age 18 to 25. Only five percent are below 18 and only ten percent are age 35 or older. In the sample, 35 percent (n=31) had attended (though not necessarily graduated from) primary school, 42 percent (n=37) attended secondary school, 10 percent (n=9) attended preparatory school, and 13 percent (n=11) have college or technical experience. The
distribution of the years of school for the participants has a range of 0-18 (\( \bar{x} \), median, and mode=8.6, SD=3.6).

| Table 10.2. Categorical demographic characteristics of individuals in Phase II. |
|---------------------------------|-----------------|-----------------|
| **Variable**                    | **Category**    | **Total (%)**   |
| Site                            | Urban           | 18 (20)         |
|                                 | Semi-urban      | 25 (28)         |
|                                 | Cabecera        | 19 (22)         |
|                                 | Ranchito        | 26 (30)         |
| Marital Status                  | Single          | 8 (9)           |
|                                 | Cohabitating    | 24 (27)         |
|                                 | Married         | 56 (64)         |
| Occupation                      | Housewife       | 55 (62)         |
|                                 | Sell goods from home part-time | 5 (6)         |
|                                 | Business from home full-time | 18 (21)         |
|                                 | Professional or employed by company | 10 (11)         |

Of the 88 participants, 30 percent (n=26) are from ranchitos, 22 percent (n=19) are from cabeceras, 28 percent (n=25) are from Ciudad Guzmán, the semi-urban area, and 20 percent (n=18) are from the Metropolitan Zone of Guadalajara (ZMG), the urban area. Sixty-four percent (n=56) of the women are married, 27 percent (n=24) are not married but cohabitate with their partner in a civil union, and nine percent (n=8) are single, divorced, or separated.
Figure 10.1 shows years of education experience by site. Ciudad Guzmán has the highest frequency of participants with college experience. None of the participants from either the ranchitos or the ZMG attended college. This was a rather surprising find in the ZMG. However, over half of the sample was recruited from a poor neighborhood where higher education is likely uncommon. Ciudad Guzmán, despite being a medium-sized town, has a university and a technical college. Due to the smaller area and population with ready access to a college, it may be that more of the young population attends college for at least a year or two. Furthermore, the sample from Ciudad Guzmán is more diverse than the sample from the ZMG, a result of opportunistic sampling and lack of access to the IMSS clinic in Guadalajara. The IMSS clinics are visited by individuals with social security and insurance through employment, and are more likely to have attended colleges. Many of the women in Ciudad Guzmán who participated in the study and had higher education experience were recruited through the IMSS clinic there.
Of the 88 women who participated in this study, 55 (62%) are housewives. The remaining 33 participants have one or more sources of income. As their primary source of income, five (6%) sell goods from home part-time (e.g., candy, chips, or homemade snacks such as flavored ice, purses, jewelry), 18 (21%) have a business in their home (e.g., small grocery, hair salon) or clean houses or businesses, and ten (11%) have a professional job or are employed by a company. Table 10.3 provides examples of types of employment and entrepreneurial endeavors of the participants. Eight of the women who work either at a home business or are employed also sell goods as a side business. Twenty-seven of the 33 working women either work from home or at a family business.

<table>
<thead>
<tr>
<th>Types of Employment</th>
<th>Items Sold From Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sell fruit at market once a week</td>
<td>Candy/sweets</td>
</tr>
<tr>
<td>Agriculture laborer</td>
<td>Tortillas</td>
</tr>
<tr>
<td>Oversees medical equipment store (family business)</td>
<td>Yogurt with toppings</td>
</tr>
<tr>
<td>Secretary</td>
<td>Chocolate covered strawberries, bananas</td>
</tr>
<tr>
<td>Nanny</td>
<td>General groceries, e.g., soft drinks, snacks, fruits, vegetables, household items, cleaning products, beer, canned and boxed goods</td>
</tr>
<tr>
<td>Lunch stand owner</td>
<td>Purses</td>
</tr>
<tr>
<td>Makes and sells bedspreads and other bedroom items</td>
<td>Cleaning products</td>
</tr>
<tr>
<td>Clerk in pharmacy</td>
<td>Roasted chicken</td>
</tr>
<tr>
<td>Clerk in grocery store</td>
<td>Milk</td>
</tr>
<tr>
<td>Cashier</td>
<td>Food, e.g., tostadas, enchiladas, tamales, tejuino (corn drink), pozole, menudo, etc.</td>
</tr>
<tr>
<td>Human Resources in large department store</td>
<td>Jewelors</td>
</tr>
<tr>
<td>Line worker in electronics factory</td>
<td>Fruits or vegetables, e.g., tomatillos</td>
</tr>
<tr>
<td>Events coordinator (family business)</td>
<td></td>
</tr>
<tr>
<td>Accountant</td>
<td></td>
</tr>
<tr>
<td>Cook/waitress</td>
<td></td>
</tr>
</tbody>
</table>

**Household Characteristics**

Household composition varies within the sample. Approximately half (n=46, 52%) of the sample lives with extended kin and approximately half (n=42, 48%) do not. Of those who do, half (n=25, 50%) live with their husband’s family and half (n=24, 50%) live with their own
family. The number of people living in the house ranges from two to thirteen, however the mean, median and mode are five. Eighty percent (n=70) of the sample live with six or fewer people. Another variable was derived to reflect geographic proximity to kin, although it includes coresidence. Sixty percent (n=53) of participants live in the same town with relatives from both their family and their husband’s family, and only six percent (n=5) live in a town with no relatives at all.

Table 10.4. Continuous household characteristics for Phase II.

<table>
<thead>
<tr>
<th>Variable</th>
<th>( \bar{x} ) (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People in household</td>
<td>5 (2)</td>
</tr>
<tr>
<td>Biweekly income per adult (pesos)</td>
<td>813.03 (541.04)</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td>0.00 (1.00)</td>
</tr>
</tbody>
</table>

Table 10.5. Categorical household characteristics for Phase II.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coresidence</td>
<td>Nuclear household</td>
<td>39 (44)</td>
</tr>
<tr>
<td></td>
<td>Husband’s kin</td>
<td>25 (29)</td>
</tr>
<tr>
<td></td>
<td>Wife’s kin</td>
<td>24 (27)</td>
</tr>
<tr>
<td>Geographic Proximity to Kin</td>
<td>No kin</td>
<td>5 (6)</td>
</tr>
<tr>
<td></td>
<td>Patrilocal</td>
<td>13 (15)</td>
</tr>
<tr>
<td></td>
<td>Matrilocal</td>
<td>17 (19)</td>
</tr>
<tr>
<td></td>
<td>Husband and wife’s kin</td>
<td>73 (60)</td>
</tr>
<tr>
<td>Husband’s Occupation</td>
<td>Not employed</td>
<td>2 (2)</td>
</tr>
<tr>
<td></td>
<td>Campesino/construction/beekeeper (not steady)</td>
<td>36 (46)</td>
</tr>
<tr>
<td></td>
<td>Industry/factory (steady)</td>
<td>32 (41)</td>
</tr>
<tr>
<td></td>
<td>Professional/corporate/business owner</td>
<td>9 (11)</td>
</tr>
<tr>
<td>Income per two weeks (pesos)</td>
<td>0-1500</td>
<td>56 (64)</td>
</tr>
<tr>
<td></td>
<td>1500-3000</td>
<td>21 (24)</td>
</tr>
<tr>
<td></td>
<td>3000-5000</td>
<td>7 (8)</td>
</tr>
<tr>
<td></td>
<td>More than 5000</td>
<td>4 (5)</td>
</tr>
<tr>
<td>Social Class</td>
<td>Upper</td>
<td>28 (32)</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>28 (32)</td>
</tr>
<tr>
<td></td>
<td>Lower</td>
<td>32 (36)</td>
</tr>
</tbody>
</table>
The average household (78%) in the sample had two working individuals, usually the husband and another male relative. Only two of the 79 husbands or partners did not have a job at the time of the interview, however, 36 (46%) are agriculture and construction laborers, or day laborers, an occupation that depends upon seasonality and availability and, therefore, is not steady. Several (n=3) of the men beekeep as their sole source of income: they are included in the seasonal/not steady work group. Beekeeping also depends upon seasonality and availability, as well as other factors. According to several people I spoke with, bees had been dying off in large numbers in the previous year due to a disease and the beekeepers had lost their honey and other products and, thus, had experienced a financial downturn. Thirty-two men (41%) are employed in a factory or industry and nine men (11%) are licensed professionals, work for a corporation, or own a business.

Participants were asked to give the total income of the household “per 15 days". Mexicans refer to a two week time period not as two weeks, but rather as 15 days. Due to the sensitivity of the question, it was decided to present the participant with income categories from which to choose instead of asking for their exact income. One of the advisors for the project, Dr. Enriqueta Valdez Curiel, who is experienced in qualitative health research in the area, suggested categories in 1500 peso increments. At the time of the research, ten Mexican pesos were equal to approximately one U.S. dollar. Sixty-four percent (n=56) of participants have a total household income of 1500 pesos or less every 15 days, or approximately US$0-$150. Twenty-four percent (n=21) of households earn 1550-3000 pesos per 15 days, while 8 percent (n=7) earn 3000-5000 and five percent (n=4) earn more than 5000 pesos. A variable was created to reflect the income per adult in each household. If the participant chose 0-1500 pesos as the income for her household and 5 adults live in the house, then the income per adult would be 300 pesos. The
mean is 813 pesos per adult bimonthly, with a range of 167-2600 pesos per adult. Although the mean is 813 pesos, the mode is 750 pesos with 77 percent of households earning 750 pesos (75 dollars) or less per adult per 15 days.

The social class measure, described in more detail in chapter 7, is an aggregate measure based on a specified area that is used by the Mexican government. Thus, it represents the social class of an area and not an individual household. Social class is examined in the analysis, however, because it is a group representation and, therefore, is similar in concept to a cultural model. Although each area in a social class designation has considerable household variation, the people living in that area are exposed to this variation on a daily basis and may share cognitive models, such as a good lifestyle or pregnancy. The socioeconomic status measure (SES) developed for data analysis (see chapter 7 for a description of this measure) incorporates the government social classification, but also incorporates other individual and household variables such as education, income, occupation of the husband and consumer goods. Therefore, SES provides an individualized perspective on status, rather than a classification based on the area in which the participant lives.

Thirty-six percent (n=32) of participants live in an area that is lower class, 32 percent (n=28) in a middle class area, and 32 percent (n=28) live in an upper class area (see Figure 10.2). The standardized distribution of SES is shown in Figure 10.3 with a range of -1.59 to 2.56. Most of the participants (60%) have an SES that falls below the mean (0.0), with the median at -0.16. Seventy-five percent of the sample has an SES at or below 0.52. Although social class is almost evenly distributed among the participants’ households, SES varies considerably. Therefore, they are measuring two different aspects of everyday existence: the aggregate social class of the area in which a participant lives, and the individual’s socioeconomic status. These two measures may
have differing relationships with a participant’s cultural competence in the model of a good pregnancy and her consonance, or ability to approximate the model in her pregnancy management behavior.

Figure 10.2. Frequency of social class in Phase II.

Figure 10.3. Distribution of socioeconomic status scores in Phase II.
Factors Related to Pregnancy

Estimated gestational age (EGA) refers to the month of gestation of the pregnancy of the participant at the time of the interview. EGA is an important factor to consider because, as explained in chapter 3, the farther along in a pregnancy a woman is, the more likely there will be a physiological buffering effect on the impact of psychosocial stress. Additionally, many women do not receive a sobada until the last few months of pregnancy, therefore, EGA should be considered when looking at frequency of the sobada. The gestation of participants ranges from two to nine months, with a mean of 6.5 months. Only 23 percent (n=20) of participants were in their fifth month or less of pregnancy when first interviewed. Forty-seven women (69%) were between six and eight months of gestation, and seven (8%) were in their ninth month. Thirty-one percent (n=27) of participants are nulliparas (i.e., no previous deliveries) and 69 (78%) had three pregnancies or fewer, including this one. However, the number of pregnancies extends to ten total pregnancies. Twenty percent (20%) had experienced a miscarriage, and eight percent had at least one deceased child.

<table>
<thead>
<tr>
<th>Table 10.6. Continuous pregnancy characteristics for Phase II.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Estimated gestational age (months)</td>
</tr>
<tr>
<td>Pregnancies</td>
</tr>
<tr>
<td>Miscarriages</td>
</tr>
</tbody>
</table>

All but four of the participants had seen a doctor at least once during the pregnancy, and seven others had not seen a doctor regularly for prenatal care. The remaining 77 (88%) had been to monthly prenatal visits during the pregnancy. Most women (n=72, 87%) began their prenatal care before or during the third month of pregnancy.
Table 10.7. Categorical pregnancy characteristics for Phase II.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity</td>
<td>Nulliparous</td>
<td>27 (31)</td>
</tr>
<tr>
<td></td>
<td>Multiparous</td>
<td>61 (69)</td>
</tr>
<tr>
<td>Doctor</td>
<td>Never</td>
<td>4 (5)</td>
</tr>
<tr>
<td></td>
<td>Less than monthly</td>
<td>7 (8)</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td>77 (87)</td>
</tr>
<tr>
<td>Midwife</td>
<td>Yes</td>
<td>28 (32)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>59 (68)</td>
</tr>
<tr>
<td>Sobada</td>
<td>Yes</td>
<td>32 (36)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>56 (64)</td>
</tr>
</tbody>
</table>

Only one participant disagreed that it is necessary to attend monthly prenatal check-ups with a doctor. This particular participant lived a very traditional lifestyle and all four of her children had been born with a midwife and she planned to have this baby with one, too. She, her husband, and children share an airy one-room house and all sleep on straw mats at night. All family members, except for the youngest child, work in the tomato fields and had migrated several years before to Jalisco from Guerrero in search of work.

Most women (72%, n=62) agree that a prenatal massage is beneficial and, furthermore, 86 percent (n=75) agree that midwives help a pregnant woman. Thirty-two percent (n=28) of the sample had visited a midwife by the time of the interview and 36 percent (n=32) of participants had received a prenatal massage. Some women reported that TV ads, doctors, and other biomedical health professionals warn of the dangers of the massage and advise against it. Although midwives are not the only people who administer prenatal massages, most midwives informed me that they will not perform the massage until six months of pregnancy. Sixty-five percent of respondents reported first going to the midwife before or during the fifth month of pregnancy, however, only four women had received a sobada before six months of gestation. Seventy-one percent of participants who had a prenatal massage received it from a midwife, 20 percent visited a sobadara, and nine percent were massaged by another person.
Perceived Stress, Pregnancy-Related Anxiety, Stressful Life Events and Epstein-Barr Virus Antibody Levels

Perceived stress (PSS) scores and pregnancy-related anxiety (PRA) scores each have a potential range of 0-40, with higher scores indicating higher perceived stress and pregnancy-related anxiety. The actual range of PSS is 9-34 (\(\bar{x} = 21\), SD=6). The actual range of PRA scores is 1-33 (\(\bar{x} = 20\), SD=7). Participants tended to have higher anxiety scores than perceived stress scores. The stressful life events (SLE) measure has a possible range of 0-8. The actual range is 0-7 (\(\bar{x} = 2\), SD=2). Most respondents had experienced four or less events in the previous year. Epstein-Barr virus antibody titers were normalized by taking the square root. The raw scores range from 19.12 to 175.38 (\(\bar{x} = 82.92\), SD=45.10). The normalized scores range from 4.37 to 13.24 (\(\bar{x} = 8.75\), SD=2.54).

<table>
<thead>
<tr>
<th>Table 10.8. Continuous stress-related characteristics for Phase II.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Perceived Stress</td>
</tr>
<tr>
<td>Pregnancy-Related Anxiety</td>
</tr>
<tr>
<td>Epstein-Barr Virus Antibodies (Raw)</td>
</tr>
<tr>
<td>Epstein-Barr Virus Antibodies (Squareroot)</td>
</tr>
<tr>
<td>Stressful Life Events</td>
</tr>
</tbody>
</table>

Social Support

Social support is measured by both perceived social support (PSCS) and social interaction. PSCS has a possible range of 0-48. The actual range is 3-17 (\(\bar{x} = 9\), SD=3). Forty-three percent (n=38) of respondents listed eight sources of support total, likely meaning they put one source of support for each situation. Most of those cases responded with family for all situations. Thirty-seven percent (n=33) listed nine or more sources of support. Social interaction has a possible range of 0-15 with an actual range of 0-14 (\(\bar{x} = 9\), SD=4). Approximately half of the participants scored between 11 and 14, indicating high social interaction.
Table 10.9. Continuous social support characteristics for Phase II.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\bar{x}$ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Social Support</td>
<td>9 (3)</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>9 (4)</td>
</tr>
</tbody>
</table>

**Cultural Domain Analysis**

The shared cultural model (CCM) of a good pregnancy, identified through consensus analysis, was validated in Phase II with the pregnant sample (see chapter 12 for a detailed discussion). Cultural competence scores in a model of a good pregnancy range from 0.65 to 0.92 ($\bar{x}=0.82$, SD=0.06). Sixty-nine percent of the sample have competence scores of 0.8 or above.

Table 10.10. Continuous characteristics from cultural domain analysis for Phase II.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\bar{x}$ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Competence</td>
<td>0.82 (0.06)</td>
</tr>
<tr>
<td>Traditional Score</td>
<td>10 (2)</td>
</tr>
<tr>
<td>Cultural Consonance</td>
<td>45 (8)</td>
</tr>
<tr>
<td>Traditional Consonance</td>
<td>11 (3)</td>
</tr>
</tbody>
</table>

Cultural consonance scores have a possible range of 0-61 and an actual range of 20-58 (mean=45, SD=8). Based on a subset of items in the CCM classified as traditional, a summary score of how many traditional items a participant knew correctly was created. The possible range of the traditional scale score is 0-12, with an actual range of 2-12 ($\bar{x}=10$, SD=2). Sixty-six percent of the sample scored a 10-12 on the traditional scale, and only one person did not score above a six, indicating a high level of participant knowledge of traditional elements of pregnancy. A consonance score was derived that gives consonance just for the traditional variables. Traditional consonance scores have a possible range of 0-18 and an actual range of 1-18 ($\bar{x}=11$, SD=3). Seventy percent of the participants scored in the upper half of scores (10-18).
CHAPTER ELEVEN: RESIDENCE PATTERNS AND SOCIODEMOGRAPHIC RELATIONSHIPS

Introduction

Coresidence with kin, geographic proximity to kin, and site are residence-related variables. The purpose of this chapter is to first examine bivariate associations with residence patterns and other sociodemographic variables such as education, occupation, and income, followed by bivariate associations of social class and socioeconomic status. A second aim of this chapter is to present and discuss significant bivariate associations with the stress and social support variables. Two psychosocial measures of stress were administered in the interview with the pregnant women: Cohen’s 10-item Perceived Stress Scale (PSS) (Cohen and Williamson 1988) and a 10-item Pregnancy-Related Anxiety Scale (PRA) (Wadhwa et al. 1993; Rini et al. 1999). In addition to these two measures, a group of questions were asked to control for the effect of stressful life events (SLE) that had occurred in the past year (Holmes and Rahe 1967). Epstein-Barr virus (EBV) antibodies were analyzed as a measure of physiological stress. It is important to remember that the two psychosocial stress measures are both subjective (i.e., perceived or self-reported) and EBV is an objective physiological measure. Social support is measured in two ways: as a perceived phenomenon and as a measure of interaction with family members. Perceived social support is also divided into two smaller measures of family support and non-family support. See chapter 7 for a complete description of the operationalization of these variables. The relationships between stress, social support, and the cultural model (including cultural competence and cultural consonance) will be discussed in chapters 13 and 14.
**Residence Patterns**

Age is significantly associated with coresidence with extended kin \((F=20.68, p=.00)\). Figure 11.1 shows that younger women and their husbands tend to live with extended kin, with the youngest women living patrilocally, and an only slightly older group living matrilocally. The oldest group of women in the sample tends to live with their own nuclear families (e.g., children and husbands) and no extended kin (see also LeVine 1993).

![Coresidence with Extended Kin](image)

**Figure 11.1.** Range of age by coresidence patterns.

Coresidence with extended kin is also significantly associated with site \((X^2=14.59, p=.02)\). Participants from the ranchitos and the ZMG tend to live with no extended kin, but in Ciudad Guzmán they tend to live with their parents and in the cabeceras participants are more likely to live with their husband’s parents (see Figure 11.2). Age is not significantly associated with site, thus does not appear to be a factor in this relationship.
Figure 11.2. Frequency of coresidence patterns by site.

Although geographic proximity to kin and coresidence with kin are significantly associated ($X^2=28.76, p<.001$), site and geographic proximity are not significantly associated. Therefore, living near kin is not associated with the size or type of municipality, but living with kin is. Urbanization tends to support nuclear households and not extended kin households (LeVine 1993). However, residence patterns in the rural areas may vary according to individual circumstance and length of marriage. In the ranchitos, despite having low income per family, many people have other resources for survival, such as fruit trees, vegetable gardens, livestock, and the barter system with neighbors and relatives, thus making living as a nuclear family with one working household member an attainable situation. Furthermore, in a village, constructing a house near the house of a relative is facilitated by an availability of space, labor, and materials. Many couples in the ranchitos do live with relatives in the beginning of the marriage, but soon move out to start their own households nearby.
Understanding residence patterns is important to this research because, as is discussed in chapter 13, social interaction and number of people in the household is linked to cultural consonance and physiological stress. As would be expected, social interaction with kin is significantly associated with coresidence with kin (F=29.32, p=.00) and number of people in the household (r=.23, p=.04). Multivariate analyses help to shape understanding of the interaction of these variables with cultural consonance and physiological stress response (EBV).

**Site and Education, Income, and Occupation**

Site, or what type of municipality a person lives in, is significantly associated with education (F=4.52, p=.01), income ($X^2=28.65$, $p=.001$), and occupation ($X^2=19.74$, p=.02). Ciudad Guzmán has the most diverse sample in terms of sociodemographic variables, with participants having a wider range of years of education, income, and occupation. I lived in Ciudad Guzmán and, therefore, had increased chances of opportunistic sampling on the streets. Furthermore, in comparison to the ZMG, the neighborhoods of Ciudad Guzmán are more diverse and I could easily interview two women in the same neighborhood with notable differences in education, occupation, and income. In the ZMG, the wealthier people tend to live in groups, in wealthy neighborhoods and opportunistic sampling was difficult. Because I lacked permission to interview in the IMSS clinic or in a private hospital in Guadalajara, upper class and higher SES is underrepresented in that subset (see Figures 11.3 and 11.4). Thus, participants in the ZMG were only recruited from the public hospital that serves the uninsured, and from an intentional sampling in a poor area, where I collaborated with a midwife, in an effort to include women who were visiting a midwife for their pregnancy. In Ciudad Guzmán I was able to interview participants at the IMSS clinic, thereby including women who tend to be employed, have higher household income, and more education than other women in the sample. No one from the
ranchitos or cabeceras has a household income of more than 3000 pesos, with the exception of one couple in one of the cabeceras who inherited a lucrative family furniture business. The samples from Ciudad Guzmán, the ranchitos and the cabeceras are similar in makeup to the actual demographic makeup of these areas. The ZMG sample is not.

![Graph of Household Income by Site](image)

**Figure 11.3.** Frequency of income categories by site in Phase II.
Education, income and occupation are understandably associated with each other, such that participants with more education tend to be employed and tend to have a higher household income. These variables are also associated with age and parity. Furthermore, a wife’s occupation is significantly associated with a husband’s occupation ($X^2=19.81$, $p=.02$). Women who are housewives are significantly more likely to be married to men who work in construction or agriculture on the basis of seasonality and availability (i.e., not steady employment) and men who work in an industry or factory (see Figure 11.5).
Although age is not significantly associated with education or income, it is associated with occupation ($F=4.03$, $p=.01$). Age is a factor in a woman’s choice to work. The majority of participants in the sample are under 25 years of age; these women also occupy the category of housewife in the sample. Thus, younger women tend to be housewives and women over 25 years of age tend to be employed. Of course, one association between age and occupation is school. Most women do not finish a degree of higher education until their early to mid-twenties and, therefore, do not become professionally employed until after school. However, children may also be a factor. Participants 25 and under are also pregnant, giving birth, and raising small children more than other participants and are more likely to be at home with the children. Finally, women who are educated and employed in professional positions tend to wait until a later age to have children, removing them from the group of young, pregnant housewives. Indeed, the majority (70%) of professional women are nulliparas, compared to 24 percent of housewives. Occupation and nulliparity is significantly associated ($X^2=11.18$, $p=.01$). Finally,
single women are more educated as a group. Women who are not married but cohabitating with a partner have less education than single women, but more education than married women (F=3.10, p=.05). Furthermore, older women in the sample are more likely to be single, while the youngest women tend to cohabitate, and a slightly older group tends to be married. Thus, younger women are more likely to be less educated, cohabitate and stay at home and raise children than women who are older, more educated, single and employed.

**Socioeconomic Status and Residence Patterns**

Socioeconomic status is significantly associated with geographic proximity to kin and coresidence with kin (F=7.16, p<.001 and F=5.49, p=.01). Figure 11.6 displays the association with coresidence, showing that nuclear households tend to have a lower SES than extended family households. Presumably this can be attributed, in part, to more than one person contributing to the household income, although income is not the only variable accounted for in SES. Couples who live with the wife’s relatives tend to have a higher SES than couples who live with the husband’s relatives. Chi-square of coresidence and husband’s occupation shows no significant relationship. All but one of the single participants live with their parents, and most are employed, thus, they contribute to the household income. Removing single participants from the analysis does not affect the significant relationship between SES and coresidence (F=3.95, p=.02).
The SES of the participants is also significantly associated with site. Although this finding is representative of ranchitos, cabaceras, and Ciudad Guzmán, non-stratified sampling in the ZMG contributed to the bias toward lower SES participants. In contrast to Figure 11.7, a representative sample would likely put the ZMG with a higher mean SES, similar to Ciudad Guzmán. Because SES is a composite variable derived, in part, from education, occupation, and income, no analyses were run for these variables.
Social Class

Social class and site are significantly correlated with each other ($X^2=62.19$, $p<.001$). Given that the government classifies all rural areas as mostly lower class with smatterings of middle class, Ciudad Guzmán as mostly upper class, and the ZMG as mostly upper class, with some middle and very little lower class, the association between social class and site is not surprising. There is enough diversity in social class within each site to make site and social class associated with different variables. Figure 11.8 gives the social class distribution by site.

Although SES and social class represent two different methodological approaches to the same concept, they are significantly associated with each other ($F=20.35$, $p<.001$) because social class is one variable in the factor analysis used to derive SES. Social class is significantly associated with occupation ($X^2=13.48$, $p=.04$), income ($X^2=19.76$, $p=.003$), and education ($F=12.47$, $p<.001$). Unlike SES, however, social class is not significantly associated with coresidence with kin or geographic proximity to kin.
When examining SES by social class and site (see Figure 11.9), the middle class of Ciudad Guzman has a higher SES than the middle classes of the cabeceras and ranchitos. The middle class of the cabeceras has a higher SES than the middle class of the ranchitos. The upper class of Ciudad Guzman has a higher SES than the upper classes of the cabeceras and ZMG. The upper class of the cabecera has a higher SES than the upper class of the ZMG. The lower classes of the ranchitos, Ciudad Guzman and the ZMG have approximately the same SES. This demonstrates the socioeconomic diversity within the governmental upper and middle social class designations.
In sum, younger women tend to be less educated, housewives, cohabitating with a partner, and live with extended kin. Living with extended kin is associated with higher socioeconomic status than living as a nuclear family. Furthermore, participants living in a ranchito and in the ZMG tend to live in nuclear families, where participants also tend to have lower SES scores. Non-representative sampling in the ZMG could be confounding these associations.

**Psychosocial and Physiological Stress**

The two psychosocial measures, PSS and PRA, are significantly moderately correlated with each other ($r=.37$, $p<.001$), however, they are not independently associated with the same factors. Perceived stress will be discussed first. PSS decreases with length of gestation, but the gradual decrease is most notable after the fifth month ($r=-.21$, $p=.05$). Participants in their ninth and final month of pregnancy experience a large drop in PSS. Previous studies have resulted in
inconsistent findings for changes in perception of psychological stressors at various points during pregnancy (DiPietro et al. 2005). Although PSS decreases with length of gestation in this sample, parity and number of previous pregnancies do not have an effect.

Participants living in the Metropolitan Zone of Guadalajara have significantly higher levels of perceived stress than non-urban participants ($t=-2.35, p=.02$) and participants from the ranchitos have significantly lower PSS levels than non-ranchito participants ($t=2.04, p=.04$). Those women living in Ciudad Guzmán and in the cabeceras have higher perceived stress than the ranchito women, but lower perceived stress than the urban women (see Figure 11.10). PSS is not, however, significantly associated with social class, SES, education, occupation of either the participant or her husband, age, marital status, coresidence with extended kin, number of people living in the house and geographic proximity to family network.

![Figure 11.10. Range of perceived stress scores by site.](image)
Participants with higher pregnancy-related anxiety scores have significantly lower socioeconomic status ($r = -0.27$, $p = .01$). Site and social class do not have a significant relationship with PRA. Additionally, although PRA has no significant relationship with education and husband’s occupation, the participant’s occupation is significantly associated with PRA ($F = 2.90$, $p = .04$). Figure 1.11 displays the relationship. Women who work full-time have noticeably less pregnancy-related anxiety than women who work part-time from home or not at all. Furthermore, professionals and company employees have the lowest levels of PRA.

Although the relationship is not significant, younger participants tend to have higher PRA scores than older participants ($r = -0.19$, $p = .08$). The six individuals in the sample who report never praying have significantly higher PRA than the rest of the sample ($t = 1.99$, $p = .05$), although there is no significant difference in PRA according to the frequency of prayer for those participants who do pray. PRA is not significantly associated with marital status, coresidence with kin, number of people living in the house or geographic proximity to family network.

![Range of pregnancy-related anxiety by occupation.](image)

**Figure 1.11.** Range of pregnancy-related anxiety by occupation.
Participants who have experienced more stressful life events in the previous years report significantly higher perceived stress ($r=.25, p=.01$). The number of stressful life events has no other significant bivariate associations.

Epstein-Barr virus antibody levels are not significantly associated with either PSS, or PRA. In other words, the physiological and psychosocial measures are not correlated. Epstein-Barr virus antibody levels significantly increase with age ($r=.267, p=.03$). Living with relatives is significantly associated with lower levels of EBV ($t=3.05, p=.003$) (see Figure 11.12) and the more people in the household, the lower the EBV antibody levels ($r=-.32, p=.01$), however, it makes no difference whose relatives the participant is living with. Marital status and geographic proximity to family network do not affect EBV antibody levels. Additionally, EBV antibody levels are not significantly associated with gestation, site, social class, SES, participant or husband’s occupation, education or income.

![Figure 11.12](image.png)

**Figure 11.12.** Range of Epstein-Barr Virus antibody levels by coresidence.
**Social Support**

Perceived social support and social interaction with the family network are not significantly correlated with each other. Participants who live in households with a lower SES \((r=.37, p<.001)\), have less education \((r=.43, p<.001)\), less income \((F=3.57, p=.02)\) and who do not work outside the home \((t=-2.73, p=.01)\) report having fewer people or places to go for social support, in other words, less perceived social support. The more hours a participant works per week, the more social support sources she reports \((r=.25, p=.02)\). The more pregnancies a participant has had \((r=-.27, p=.01)\) and the more people living in the house \((r=-.25, p=.02)\), then the fewer the reported sources of support. Furthermore, women who report not feeling loved by their mother perceive less social support from all sources in their lives \((t=-2.03, p=.05)\). Notably, “mother” was consistently listed as one of the most important people to a woman during pregnancy during the freelist exercise of Phase I. Perceived social support is not significantly associated with PSS, PRA, EBV antibody levels, site, husband’s occupation, social class, gestation, age, marital status, coresidence with kin or geographic proximity to family network.

As stated above, higher numbers of people living in the house is linked to lower perceived support in general, but this association only extends to perceived support from family \((r=-.26, p=.02)\) and not non-family. In other words, listing more non-family members as a source of support is not significantly correlated with the number of people living in the house. It is worth mentioning that participants who listed higher numbers of non-family sources of perceived support also responded with significantly fewer sources of family support \((r=-.28, p=.01)\). Despite the relationship between higher numbers of people in the household and less perceived social support from family, there is no significant association between living with family and perceived social support in general, or perceived social support from family.
Therefore, living with relatives does not affect perceived social support, but living with a large number of relatives does. Perhaps when more relatives are living under one roof, the available support could be spread thin, so to speak. From another vantage, a participant may perceive less support in this situation because a household with many individuals could have built-in support that is taken for granted.

Participants who are younger (r=-.43, p<.001) and have had fewer pregnancies (r=-.46, p<.001) have more social interaction with the family network than older women who have experienced more pregnancies. Increased social interaction with family network is significantly associated with an increase in the number of people living in the house (r=.23, p=.04).

Participants who report more social interaction with family network also have higher levels of pregnancy-related anxiety (r=.21, p=.05). Social interaction is not significantly associated with PSS, EBV antibody levels, perceived social support (general, family, non-family), site, social class, SES, education, gestation, marital status, occupation of participant or husband, or income. Geographic proximity to family network and coresidence with kin are two of the components of the social interaction sum, therefore, they are not considered for analysis.

Discussion

In summary, participants who score higher on the PSS scale have experienced more stressful life events in the past year, tend to be at five months or less gestation and live in urban areas compared to women with low scores. Participants who score higher on the PRA scale live in households with lower socioeconomic status, work part-time or not at all and do not pray compared to women who with low PRA scores. Pregnant women with higher EBV levels are older and live with fewer relatives. Although participants who perceive more stress also tend to have more pregnancy-related anxiety, neither of these measures is correlated with physiological
stress response. Other researchers have found a lack of association between psychological and physiological stress during pregnancy, concluding that these findings support a stress buffering mechanism during pregnancy (DiPietro et al. 2005; Petraglia et al. 2001). Thus, the findings of this dissertation support the previous research.

Participants who perceive more social support have higher SES, more education, fewer pregnancies, fewer people in the household, work more hours per week and feel loved by their mothers. Furthermore, participants who perceive more support from family perceive less support from non-family and live with fewer people. Social interaction with family network and perceived social support are not correlated with each other, even when looking at perceived support from family and non-family separately. Participants who report more social interaction are younger, have had fewer pregnancies, live with more people and have more pregnancy-related anxiety than other participants.

In other settings, persons from lower SES groups have been found to have more stressors in their lives, and to have higher levels of psychosocial stress and fewer social resources (Seguin et al. 1995). Participants in this research with lower SES report more pregnancy-related anxiety as well as fewer perceived social support resources (r=.37, p<.001), but do not have more life crisis stressors in the previous year than other participants. None of the components of SES have a significant association with EBV antibody levels.

Participants in this study with low scores on the SES scale do not have the material and financial resources to alleviate anxiety about the pregnancy. Visiting another doctor, specialist, midwife, or curandera incurs expenses that may not be readily available for a person with limited economic means. Therefore, it is likely that an individual with limited resources may worry about what will happen if there is a complication and how they will care for the new baby.
Adding to that, there is a tendency for participants in this research with less education to have higher rates of PRA, although the relationship is not significant. Education itself is a source of empowerment that can lead to less anxiety through reading health and pregnancy information and discussing topics of concern with the professionals who have the authoritative knowledge. Women who are professionals or employed by a company and work full-time have less PRA and these women tend to be more educated and interact at work with other educated people.

To conclude, this research supports previous research that finds a possible “buffering” mechanism during pregnancy on the physiologic effects of (i.e., response to) psychosocial stress. Stressful life events appear to be associated with perceived stress only. Stress in everyday life and anxiety about pregnancy are associated with different factors. The physiologic stress response has no apparent bivariate associations with most sociodemographic variables or social support variables.

Perceived social support has no perceptible bivariate relationship with either the psychosocial or physiological stress measures. EBV antibody levels decrease with increasing numbers of relatives in the household. However, there is a decrease in the perception of social support with an increase in the number of people in the household. Therefore, the effect of interacting with family on a daily basis may have latent (i.e., unperceived) benefits in the form of lower levels of physiologic stress response. Increased social interaction is associated with increased PRA, but not PSS or EBV. Perhaps interacting with relatives on a frequent basis invites opportunity for scrutiny and monitoring of a pregnant woman’s behavior. Many of the elements of the cultural model are behaviors and emotions that the individual is responsible for controlling. Family members may increase prenatal anxiety through increased governance of the pregnancy.
CHAPTER TWELVE: VALIDATING THE CULTURAL MODEL AND EXAMINING CULTURAL CONSONANCE AND INTRACULTURAL VARIATION

Validating the Cultural Model of a Good Pregnancy

The cultural consensus model (CCM) of a good pregnancy, identified in Phase I, was tested with the Phase II participants to determine if they also agreed with the model. This section of the interview consisted of a 30-item, 4-point agree/disagree rating scale. The rating responses were analyzed with Anthropac 4.0 (Borgatti 1996a). Participants in the second phase did agree with the cultural model identified through cultural domain analysis in Phase I. Consensus analysis results support a shared cultural model of a good pregnancy with strong agreement among the 88 participants in Phase II (eigenvalue=59.28, Ratio=18.70). The average cultural competence, or correlation coefficient, of the participants is 0.82 (SD=.06) (see Figure 12.1 for a distribution of cultural competence).

Like in Phase I with the non-pregnant participants, competence scores for Phase II participants are not significantly associated with age or site. The trend seen in Phase I for older women to have higher competence scores is not evident in Phase II. This is not surprising given that the age range (14-41 years) in Phase II is restricted to reproductive age. Competence scores are not significantly associated with civil status, parity, number of previous pregnancies, coresidence with extended kin, geographic proximity to family network, perceived stress, pregnancy-related anxiety, EBV antibody levels, visiting a doctor, visiting a midwife, or receiving a sobada.
Figure 12.1. Distribution of cultural competence scores in Phase II.

Competence scores are significantly associated with social class (F=3.058, p=.05).

Figure 12.2 shows that members of the upper and lower class have higher competence scores than the middle class. No outliers were identified by the boxplot in Figure 12.2 that would cause the middle class to have lower competence scores. An outlier is defined as a case with a value between 1.5 and 3 box lengths from the upper or lower edge of the box. The box length is the interquartile range determined by Tukey’s hinges. Social class is a government classification for a general area, thus, the criteria for social classification are based on an average rating for the area in question, but there will be individual household variation within an area. Likewise, a cultural model is based on a general consensus with variation. Because competence is associated with social class and not site (i.e., competence does not differ between people living in an urban or rural area, but rather it differs according to the lifestyles of the people living in the immediate area), it can be postulated that living in an area populated with other people who share both a geographic and economic lifestyle influences an individual’s beliefs and knowledge in the
model. As discussed in Chapter 11, site is significantly associated with social class largely because the ZMG and ranchito samples are mostly lower class, although the ZMG has a sufficient contingent of middle and upper-class participants and the ranchitos have a smaller contingent of middle-class participants. The cabecera sample is mostly middle class with some upper class. The sample from Ciudad Guzmán is primarily upper class, but also has contingents of middle and lower-class participants. The diversity may be small, but apparently it is enough to deny a significant association between site and cultural competence.

![Figure 12.2. Range of cultural competence scores by social class in Phase II.](image)

As with the Phase I data, Phase II responses to the cultural consensus model were recoded to reflect the number of traditional questions a participant answered correctly. For Phase II, 12 items were included in the traditional scale. The distribution of the traditional scores for Phase II is seen in Figure 12.3. The graph gives a visual appreciation of the strong agreement on these elements. Out of 12 traditional components, most of the participants agree with at least six. Participants who know more of the traditional elements have significantly higher cultural competence scores in the overall model (r=.24, p=.02). Traditional scores are significantly
negatively correlated with socioeconomic status ($r=-.36$, $p<.001$), but not with site or social class. Participants with lower SES are more likely to agree with the 12 traditional elements. Although being more competent in the CCM of a good pregnancy is significantly associated with social class, answering correctly for the traditional items is not. Women who know more of the traditional items than others have fewer years of education ($r=-.44$, $p<.001$), lower household income ($F=6.96$, $p=.002$), and tend to be housewives or have a business from home ($F=5.42$, $p<.001$). Additionally, having more traditional knowledge is not significantly associated with age, parity, number of pregnancies, site, coresidence with kin, or geographic proximity to family network.

![Figure 12.3. Distribution of traditional scale scores in Phase II.](image)

**Examining Variation Within the Sample**

For comparison, a biomedical score was created for each participant. There are only six clearly biomedical elements in the model: attending monthly prenatal appointments, taking prenatal vitamins, and avoiding alcohol, smoking, drugs and medicines. Taking drugs was left out of the consonance questions in Phase II because it is such a sensitive question I did not think
participants would answer truthfully even if they did take drugs. From my own observation, drug use was not a problem in most of the areas where I was conducting fieldwork. Avoiding medicines during pregnancy was not included in the 30 agree/disagree CCM questions, but a consonance question was added to ask if a participant had taken medicines during the pregnancy. Therefore, the biomedical score includes four items: attending monthly prenatal appointments, taking prenatal vitamins, avoiding smoking and avoiding alcohol. The biomedical consonance score includes a fifth item: avoiding medicines. The biomedical score has a possible range of 0-4. All but one participant scored a perfect 4, and the remaining participant scored a three. She did not agree that visiting a doctor monthly was necessary. This participant had not seen a doctor and was planning to deliver with a midwife. Her lifestyle was very traditional and has been described earlier, the family sleeps on straw mats, she has very little education and all the children work in the fields. The high competence scores among the upper and lower classes is not being driven by greater knowledge of the biomedical elements, as all participants agree on these items and there is no variability. It is likely that although the upper-class participants do not agree with the traditional elements as much as other participants, they have higher agreement with the rest of the model, resulting in high competence scores overall.

With regards to site, there is notable variation in availability of health care, both biomedical and traditional, in the ranchito group that could be related to the wide range of competence scores. In Phase I, the ranchito group was made of only two ranchitos with similar circumstances (e.g., isolated), thus producing a compressed set of terms and little variation. In Phase II, the group is made up of participants from eight different ranchitos, ranging in size from a few hundred to several thousand. Two of the smaller ranchitos, La Yerbabuena and Poncitlán, have a Casa de Salud, or Health House, that is not staffed on a regular basis, but visited by a
doctor and nurse team once or twice a month. Poncitlán also has a practicing midwife and is less than a ten minute drive from the nearest Centro de Salud. La Yerbabuena is 30 minutes by car to the nearest Centro de Salud and does not have a midwife. The midwife who used to practice there is still alive, but was over 100 years old at the time of the study. One of the participants from La Yerbabuena remarked that her sister (mid-20s) was the last person in the village to be born with a midwife. Three of the smaller ranchitos do not have a Health House. Two of these, San Juan Espanatíca and Los Laureles, are a 20 minute bus ride from the nearest Centro de Salud, or Health Center, that has a full-time doctor and staff. These two ranchitos also have at least three practicing midwives who serve the area. The third, Los Colomos, has a country doctor in the area who practices from his home in a nearby town (approximately 20 minutes by car or bus) that also has a Health Center. The country doctor, Dr. Benito, delivers babies for women in the area if they are not able to make the hour-drive to the nearest hospital. There is also a woman in the area who performs the prenatal massage. These smaller ranchitos do not have uniform health care availability, but, instead, are each unique in their resources for pregnant women.

The three other ranchitos are larger and have several thousand inhabitants, therefore, they have a Centro de Salud in these towns. Jiquilpan does not have a practicing midwife anymore. The midwife in the town is ill and ceased to practice in the last decade. Ejido José María Morelos has at least two practicing midwives, one of whom has an office and sign out front to advertise her services. Copala also has a midwife, who also practices as a curandera and sobadora. Thus, the larger ranchitos have varying levels of available care like the smaller ranchitos. All have a permanently staffed Health Center and two have midwives in addition to the Health Center.
The variation in availability of biomedical and traditional prenatal care may be an influential factor in the variation among the ranchito participants for traditional elements. Whereas midwives and biomedical health care are readily available in the cabeceras, Ciudad Guzmán, and the ZMG, the ranchitos do not have the same uniform availability. Put simply, in most cases the participants from the ranchitos do not have ready access to biomedical care or midwifery care. However, a higher range and mean score on the traditional element scale simply implies that there are participants from the ranchitos who score high on the scale and, thus, carry the group.

To further examine possible intracultural variation, Factor 1 from consensus analysis was graphed against Factor 2 in a scatterplot. In the scatterplot (see Figure 12.4), there is a subcluster (n=16) with low competence on both factors. Because there is variation in traditional knowledge in both Phase I and Phase II, it seemed likely that there could be an association between the subcluster and traditional knowledge. Looking at the frequencies for each of the 30 questions in the cultural consensus model, only six questions, all traditional elements, have less than 90 percent overall agreement among the participants: eating acidic foods is bad, eating cold quality foods is bad, being nervous can cause the baby to be born “badly” or “sick” (in Spanish the phrase is *sale mala*), getting angry can cause the baby to be born “badly,” midwives help pregnant women, and the sobada is good for the mother and baby. For clarification, informants said the baby could be born nervous, easily frightened, or cry a lot if the mother is nervous during the pregnancy; likewise, if the mother becomes angry during the pregnancy the baby can be born with an angry disposition, be easily angered, and cry a lot.
Figure 12.4. Scatterplot of factor 1 and factor 2 cultural competence scores from CCA with subcluster in red.

Agreeing (or answering correctly) that midwives help pregnant women and the sobada is beneficial is significantly associated with being in this cluster ($X^2=6.01$, $p=.05$, see Figure 12.5). Despite setting these individual women apart from the others, the two questions have high agreement within the entire pregnant sample. Seventy-two percent think the sobada is beneficial and 86 percent agree that midwives are helpful. Although there is strong agreement by all participants on these two items, they are set apart because the majority of the items in the model have agreement of 90 percent or higher. Therefore, those items that are not as strongly agreed upon stand out. The two items that stand out, the sobada and that midwives are helpful to a pregnant woman, are topics that receive attention in the biomedical domain. Some women stated they had seen television commercials warning against the danger of the sobada, or that their doctor had advised not to have it done. Because midwives usually administer the sobada, the warning may be construed as a warning against receiving care from a midwife. Indeed, almost every woman in the sample who has visited a midwife during pregnancy said they did so for the
sobada. The fact that there is notably lower agreement on these two items may indicate waning support for the authority of the midwife on matters of pregnancy and, therefore, demonstrate a consequence of culture change in the domain of prenatal care where the authority of the midwife and ethno-obstetrics is being overshadowed by the authority of biomedical obstetrics.

![Figure 12.5](image)

**Figure 12.5.** Frequency of correctly knowing midwife and sobada questions by inclusion in a subcluster of low-competence participants.

Upon further examination of the shared characteristics of the subcluster (n=16), it was discovered that these women have several other commonalities. Women in the subcluster have significantly lower SES (t=2.05, p=.04), fewer years of education (t=3.22, p=.002), more pregnancies (t=-2.62, p=.01), and tend to live in nuclear households or with the participant’s relatives ($X^2=7.76$, p=.02). Being in this subcluster is not significantly associated with social class, income, occupation, parity, traditional scores, site, or geographic proximity to family network.

Thus, there is a trend for the participants in the subcluster to agree more with the traditional part of the overall cultural model of a good pregnancy. Belief that midwifery and the
sobada are beneficial, lower SES, less education, more pregnancies, and residence patterns are what sets them apart, and results in lower competence scores on both factors. A linear regression analysis was run with the subcluster (i.e., inclusion in the subcluster) as the dependent variable and answering correctly for midwifery and the sobada as the predictor, controlling for education and number of pregnancies. After midwife and sobada are entered into the model, number of pregnancies and education lose significance. Education appears to have the most influence and explains ten percent of the variation by itself ($r^2$ change=.11, $F$ change=10.35, $p=.002$). However, women who agree with midwifery and the sobada have significantly less education ($F=6.51$, $p=.002$) than women who do not agree with these two elements, therefore, these two factors confound each other in the analysis. More education is characteristic of individuals who adopt change, or innovation, specifically when it comes to technology (Rogers 1962). Biomedicine promotes a technocratic model of birth (Davis-Floyd 2003), even in Mexico (Carillo 1999; Davis-Floyd 2001). Thus, women who are more educated will accept technological innovation and change in the domains of pregnancy and childbirth.

Despite the variation, there is a clearly defined model with overall strong agreement. In fact, everyone agrees on a particular subset of model components. These eight components, of the 30, have nearly 100 percent agreement: eat well, take prenatal vitamins, don’t smoke, don’t drink, don’t do drugs, don’t lift heavy things, attend monthly prenatal appointments, and stay tranquil or calm.

**Summary of Analysis of the Cultural Model**

To summarize, among pregnant women competence scores are not significantly associated with age, site, SES, civil status, coresidence with extended kin, or geographic proximity to family network. The only variable significantly associated with cultural
competence is social class. Examining a subset (n=12) of questions called “traditional elements” demonstrates that knowing these elements is associated with lower SES. A subcluster (n=16) of participants knows more of the traditional elements than the rest of the group, but has lower competence scores in the model. This subcluster is set apart by not only knowing more of the traditional elements, but specifically by knowing the only two midwifery-related items in the model and having less education. Inclusion in the subcluster is also significantly associated with lower SES, more pregnancies, and residence patterns. One goal of this study is to better understand intracultural variation in the context of culture change. The combination of agreeing that midwives and the sobada are good for pregnancy and having lower cultural competence in the model of a good pregnancy suggests that the traditional practice of midwifery is losing importance in the shared cultural model of a good pregnancy, and is related to achieving higher education.

Finally, having more traditional knowledge is likely associated with lower SES because of the demographic makeup of the ranchitos and poor urban areas. However, there is substantial variation in the ranchito group. As discussed above, the smaller ranchitos do not have direct access to permanently-staffed biomedical care, and some do not have direct access to midwifery care. Considering biomedicine as a western concept, biomedical care could be mapped in such a way as to represent the gradual permeation of one culture into another. At the time of this study, biomedical clinics are typically found in cabeceras and towns with 2500 or more inhabitants. Adding to the structural influence of placing clinics in political centers and more populated areas is the idea that change tends to be accepted by smaller, less educated areas later than in larger ones (Rogers 1962). That is not to suggest a continuum of change from urban to rural, as many mechanisms contribute to fundamental changes in a shared way of thinking. In the ranchitos,
especially the smaller and more isolated ones, there is a more traditional way of living overall. For example, women continue the practice of soaking corn overnight, grinding the corn into *masa* on the *metate* in the morning, and making the tortillas by hand. Furthermore, the ranchitos do not have daily access to biomedicine and, thus, continue to use traditional medicinal knowledge and practices in the absence of biomedical influence. The poorer areas of the cities are inhabited largely by people who have migrated, or whose parents migrated, from the rural areas. Therefore, the ranchito models of thought have proliferated in the poorer areas of the cities.

To conclude, there is one cultural model of a good pregnancy in southern Jalisco, Mexico that blends tradition and biomedicine. Among pregnant women, what little variation exists is found in the portion of the questions that deal with traditional knowledge. Knowledge of a specific set of traditional elements is associated with high competence in the model and socioeconomic status, but a less knowledgeable subcluster of participants is defined by their agreement with midwifery and the prenatal massage and less education. Knowing the traditional elements does not equate to behavior. Most women deliver with doctors due to economic factors, primarily to receive coverage of the cost of prenatal care and delivery. Furthermore, women cited trust in the training, cleanliness, and safety of biomedical practitioners. These factors appear to be related to a shift in practitioner choice. Midwives continue to fill a specific niche for complaints outside of biomedicine, such as the need to reposition the baby and make the mother comfortable with a sobada. Although the practice continues, there appears to be a decline in agreement with midwifery, thus indicating a possible change in authority in the domain of prenatal beliefs and practices. Despite low rates of midwifery-assisted births, midwives and the sobada are still an integral part of the cultural model, as evidenced by 86
percent agreement that midwives are beneficial and 72 percent agreement that the sobada is beneficial. Thus, the cultural model of a good pregnancy in Jalisco is a clear example of melding of tradition and biomedicine.

**Cultural Consonance**

Cultural consonance is a measure of the degree to which an individual approximates the cultural model of a good pregnancy with her behavior. Derivation of cultural consonance is described in detail in chapter 7. Actual consonance scores range from 20-58, with a possible range of 0-61 (\( \bar{x} = 44, \ SD = 7 \)). Figure 12.6 exhibits the distribution of consonance scores.

![Figure 12.6. Distribution of cultural consonance scores.](image)

Cultural consonance, or behavior, is not correlated with cultural competence in the CCM of a good pregnancy. Put another way, knowing the model is not associated with behaving according to the model. Table 12.1 gives the weighted correct answers (i.e., the answer key from consensus analysis), the percentage of agreement with these items, and the percentage of consonance with these items.
Table 12.1. Answer key from consensus analysis in Phase II and number and percent of participants who are consonant with that item.

<table>
<thead>
<tr>
<th>Agree is Good</th>
<th>Weighted Answer</th>
<th>Consonance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat well</td>
<td>2.80</td>
<td>73 (83)</td>
</tr>
<tr>
<td>Take prenatal vitamins</td>
<td>2.83</td>
<td>83 (94)</td>
</tr>
<tr>
<td>Exercise</td>
<td>2.36</td>
<td>72 (82)</td>
</tr>
<tr>
<td>Be calm</td>
<td>2.32</td>
<td>52 (59)</td>
</tr>
<tr>
<td>Monthly checkup with doctor</td>
<td>2.74</td>
<td>77 (88)</td>
</tr>
<tr>
<td>Family support</td>
<td>2.63</td>
<td>74 (84)</td>
</tr>
<tr>
<td>Economic security</td>
<td>2.19</td>
<td>65 (74)</td>
</tr>
<tr>
<td>Have a partner</td>
<td>2.59*</td>
<td>80 (91)</td>
</tr>
<tr>
<td>Partner support</td>
<td>2.63</td>
<td>70 (80)</td>
</tr>
<tr>
<td>Married</td>
<td>1.81</td>
<td>56 (64)</td>
</tr>
<tr>
<td>Rest</td>
<td>2.44</td>
<td>83 (94)</td>
</tr>
<tr>
<td>Regulate body temperature</td>
<td>2.12</td>
<td>46 (52)</td>
</tr>
<tr>
<td>Checkup with midwife</td>
<td>2.22</td>
<td>29 (33)</td>
</tr>
<tr>
<td>Sobada</td>
<td>1.97</td>
<td>31 (35)</td>
</tr>
<tr>
<td>Sleep well</td>
<td>2.33</td>
<td>59 (67)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agree is Bad</th>
<th>Weighted Answer</th>
<th>Consonance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drink alcohol</td>
<td>2.58</td>
<td>71 (81)</td>
</tr>
<tr>
<td>Get angry</td>
<td>2.00</td>
<td>58 (66)</td>
</tr>
<tr>
<td>Smoke</td>
<td>2.82</td>
<td>83 (94)</td>
</tr>
<tr>
<td>Lift heavy objects</td>
<td>2.70</td>
<td>56 (64)</td>
</tr>
<tr>
<td>Illness</td>
<td>2.58</td>
<td>44 (50)</td>
</tr>
<tr>
<td>Take medicines</td>
<td>1.80*</td>
<td>44 (50)</td>
</tr>
<tr>
<td>Blow/hit/fall</td>
<td>2.72</td>
<td>75 (85)</td>
</tr>
<tr>
<td>Susto</td>
<td>2.30</td>
<td>68 (77)</td>
</tr>
<tr>
<td>Eclipse</td>
<td>2.30</td>
<td>60 (68)</td>
</tr>
<tr>
<td>Stress</td>
<td>2.36</td>
<td>13 (15)</td>
</tr>
<tr>
<td>Worry</td>
<td>2.25</td>
<td>17 (19)</td>
</tr>
<tr>
<td>Nervousness</td>
<td>1.96</td>
<td>78 (89)</td>
</tr>
<tr>
<td>Work too much</td>
<td>2.17</td>
<td>73 (83)</td>
</tr>
<tr>
<td>Alcoholic husband</td>
<td>2.53</td>
<td>82 (93)</td>
</tr>
<tr>
<td>Eat cold foods (temperature)</td>
<td>1.87*</td>
<td>19 (22)</td>
</tr>
<tr>
<td>Eat acidic foods</td>
<td>1.71</td>
<td>33 (38)</td>
</tr>
</tbody>
</table>

*Weighted averages are from Phase I consensus analysis. Item was not included in Phase II CCM.

Women who are single, divorced, or separated have significantly lower consonance scores than women who are cohabitating or married (F=3.35, p=.04; $\bar{x}$: single, divorced, separated=38, cohabitating=45, married=45). Being single automatically affords a participant dissonance with three elements of the cultural model: having a partner, being married, and partner support. Lower-class participants have significantly lower consonance scores than...
middle to upper-class participants (F=4.44, p=.02; $\bar{x}$: lower class=42, middle class=47, upper class=45) (see Figure 12.7). Women living in the Metropolitan Zone of Guadalajara have significantly lower consonance scores than women from any other area (F=7.08, p<.001; $\bar{x}$: ZMG=38, Ciudad Guzmán=45, cabeceras=47, ranchitos=47) (see Figure 12.8).

**Figure 12.7.** Range and median of cultural consonance scores by social class.

**Figure 12.8.** Range and median of cultural consonance scores by site.
Mean consonance scores for Ciudad Guzmán, cabeceras, and ranchitos are between 45 and 47, but in the ZMG, the mean consonance score is 38. A large portion of the urban and ranchito participants are lower class, indicating social classification is not as important as the degree of urbanity in a woman’s ability to approximate the model. The low score for the urban participants cannot be explained by social class alone because the ranchitos (where the sample is largely lower class) have high consonance. Additionally, socioeconomic status, education, and income are not significantly associated with consonance scores, but occupation is ($F=2.96$, $p=.04$). Housewives have significantly higher consonance scores than women who sell goods from their home or who work outside of the home. The mean score of housewives is 46, but for women who work outside the home or have a business from home, it is 41-42 (see Figure 12.9).

![Figure 12.9](image)

**Figure 12.9.** Range and median of cultural consonance scores by occupation.

The farther along the pregnancy, the more consonant the participant becomes with the CCM ($r=.27$, $p=.01$). However, consonance is not related to whether or not this is the participant’s first pregnancy, how many pregnancies she has had, her age, and whether or not she
has visited a midwife or received a sobada. Living in close geographic proximity to a family network is significantly associated with higher consonance scores than for women with no relatives in the same town (F=5.79, p=.001; \( \bar{x} \) : no relatives=34, patrilocal=46, matrilocal=42, both relatives=46) (see Figure 12.10). Women living in a town patrilocally have a slightly higher mean and smaller range than those living in a town matrilocally.

**Figure 12.10.** Range and median of cultural consonance scores by geographic proximity to kin.

Participants who have higher consonance scores have significantly lower perceived stress \((r=-.47, p<.001)\) (see Figure 12.11) and fewer stressful life events in the preceding year \((r=-.37, p<.001)\) (see Figure 12.12).
A Pearson correlation between consonance and pregnancy-related anxiety nears significant ($r=-.19, p=.07$) with a tendency for women with higher cultural consonance to have lower pregnancy-related anxiety. Cultural consonance and Epstein-Barr Virus antibodies do not have a significant relationship. It is noteworthy to mention that a larger sample size might yield different results. The reduced sample for analyses using EBV antibody levels is 63 participants.
Figure 12.12. Scatterplot of cultural consonance and stressful life events.

Although consonance is not significantly associated with perceived social support, participants who have more social interaction with family networks have significantly higher consonance scores ($r=.24$, $p=.03$) (see Figure 12.13).
Figure 12.13. Scatterplot of correlation of cultural consonance with social interaction with family network.

Consonance with the Traditional and Biomedical Elements of the Cultural Model

Using the same set of 12 variables that comprise the traditional model, a traditional consonance score was created according to how much each individual was able to approximate the traditional elements of the model in her behavior. Likewise, a biomedical consonance score was created to reflect an individual’s behavior according to the biomedical elements of the model (n=5). As would be expected, being consonant with both the traditional and biomedical variables is significantly associated with being consonant with the whole cultural model of a good pregnancy. Agreeing with the traditional model (traditional scale score) is significantly associated with traditional consonance, or behaving traditionally (r=.25, p=.02). As with consonance with the whole model, women who are farther along in the pregnancy also have higher traditional consonance scores (r=.27, p=.01). Women who had received a sobada at the time of the interview have significantly higher traditional consonance scores (t=2.75, p=.01),
however, there is no significant relationship if a woman has visited a midwife with this pregnancy or a previous pregnancy. Traditional consonance has no significant relationship with social class or site.

Participants who have higher traditional consonance have significantly lower perceived stress ($r=-.37, p<.001$) (see Figure 12.14), lower pregnancy-related anxiety ($r=-.27, p=.01$) (see Figure 12.15), and experienced fewer life crises events in the preceding year ($r=-.27, p=.01$).

![Figure 12.14. Scatterplot of traditional consonance and perceived stress.](image)

Traditional consonance is not significantly associated with perceived social support or social interaction with family network.
**Figure 12.15.** Scatterplot of correlation of traditional consonance and pregnancy-related anxiety.

The biomedical consonance score was derived using five elements from the cultural model. Being consonant with the biomedical items is significantly associated with knowing the biomedical elements of the model (biomedical score) \((r=.40, p<.001)\). This result may be confounded by the fact that all but one participant has a perfect agreement with the biomedical elements. Number of pregnancies is inversely correlated with biomedical consonance \((r=-.28, p=.00)\) such that the more pregnancies a woman has had, the less she behaves in accordance with the biomedical elements. This could be due to age. Another possibility is that the experience of having more children imbues women with more confidence in their ability to manage pregnancy and to pick and choose which biomedical behaviors are more necessary than others.
Biomedical consonance is significantly associated with site (F=5.13, p=.003; \( \bar{x} \): ZMG=9, Ciudad Guzmán=12, cabeceras=12, ranchitos=11). Biomedical consonance is not significantly associated with gestation, perceived stress, pregnancy-related anxiety or Epstein-Barr Virus antibodies.

**Discussion**

Both micro and macro-level factors affect an individual’s ability to approximate the cultural model of a good pregnancy. The CCM identified in this research has very high agreement, and most women are very knowledgeable of this model. The model blends both biomedicine and tradition in the domain of pregnancy. Variation in consonance with the model is not correlated with competence in the model.

Cultural competence, or knowledge of the model, and cultural consonance, or behaving in accordance with the model, are significantly associated with different factors. Therefore, factors that influence behavior, or a person’s ability to behave in a culturally-appropriate way,
are different from factors related to how well a person knows culturally-appropriate behavior. For example, social class is significantly associated with cultural competence and cultural consonance. However, the relationship of social class to each of these variables varies. Middle-class participants have significantly lower cultural competence than participants from the lower and upper classes. Additionally, lower-class participants are slightly more competent in the CCM than upper-class participants. In contrast, social class relates to behavior, or consonance, in a different manner. Cultural consonance scores for the middle class are significantly higher than scores for the lower and upper classes. In fact, lower-class participants have the lowest cultural consonance mean of the three social classes. Therefore, although the lower-class participants tend to be more knowledgeable, or competent, in the model, they also tend to behave in a less culturally-appropriate manner than other participants. Furthermore, middle-class participants tend to be the least knowledgeable of the model, but approximate the model more in their behavior than other participants. Finally, lower-class participants tend to have the lowest consonance scores overall in the whole model.

Thus, the area in which people live and interact in their daily existence influences knowledge and behavior differently. There may be other cultural and structural factors that inhibit or support appropriate behavior, despite knowing how to behave. Furthermore, not being able to approximate the cultural model is significantly associated with increased incidence of stressful life events, or environmental stressors, and levels of self-reported psychosocial stress. In other words, women who are better able to approximate the shared model of a good pregnancy in their behavior have lower levels of reported psychosocial stress. In this sample, cultural consonance has no significant bivariate relationship with perceived social support, but more
social interaction with the family network is associated with higher consonance. The intricacies of these relationships will be further examined with multivariate analyses in chapter 14.
CHAPTER THIRTEEN: THE PREGNANCY EXPERIENCE IN EVERYDAY LIFE

Introduction

Each of the 88 participants has a unique life informed by culture, sociopolitical relationships, the environment, and their everyday existence within these structural boundaries. They maneuver through their lives in varying ways and, for all, their lives become embodied. Seven women’s stories are presented on the following pages, along with their competence, consonance, and stress levels. There are noticeable differences in their situations and how they embody the stresses of pregnancy and everyday life. For each case discussed, the percentile ranking within the sample for the stress measures is given.

Luz María – San Juan Espanatíca

Luz María is 36 years old and due any day with her fourth child. She and her husband have been together for 12 years and live with their three small children in a two room house in a rural area outside of town. One room is a bedroom and the other has the kitchen and a second bed. Doña Nati took me to see her because Luz Maria was her client and had requested a visit with her. Doña Nati had delivered all three of her previous children and Luz María was going to deliver for the first time with a doctor at the Regional Hospital in Ciudad Guzmán (about 30 minutes from SJE). All of the births had taken place in Doña Nati’s house.

Luz María lives a very traditional lifestyle. She has a ninth grade education and her husband is a campesino. They live next door to his parents, the only two houses around. His job is relatively stable, however, and they have a truck he can borrow from work and another that belongs to her father-in-law. She says her husband is the head of the household. When she
needs to, Luz María walks 20-30 minutes into San Juan Espanatíca for groceries, or other errands. She is one of the few participants who does not have running water or electricity, although they had, at one point, had electricity. An unused television set sits on a shelf in the home. She cooks on an indoor brick and adobe stove. The family drinks and cooks with the purified water that comes in the 5-gallon containers most people drink in Jalisco. Unlike most women today, Luz María washes her clothes in the river behind her house and says she spends ten hours a day doing chores. Her mother-in-law helps her out with the daily chores while she is pregnant.

Figure 13.1. Interviewing Luz María at her home.
When asked why she visits the midwife, Luz María replied that when she hurts low in the belly (se lastima abajo) she goes for a sobada. This happens from doing chores like washing clothes in the river. Doña Nati usually gives her a sobada and has also prescribed chamomile tea to her before because she was “cold” in the stomach (porque era fría en el estómago). She also said that she has always gone to Doña Nati for advice after the doctors have told her anything about her pregnancies. Doña Nati, Evita and I visited Luz María again after the baby was born so that Doña Nati could check the umbilical cord stump because the parents were worried it might be infected. Luz María showed us where the baby was placed outside during the day. Her husband had fashioned a hanging bassinet out of vines and they simply placed a blanket inside of it and put the baby in it, then covered the baby. In the past she has seen Doña Nati postpartum to see how the cuarentena is going (como sale la cuarentena) and also she has been massaged because her womb was bothering her (lo soba porque algo molesta en la matriz). Luz María has always observed the cuarentena by eating chicken soup, drinking milk with chocolate, and eating
toast, among other things. She also avoids “cold” foods (las cosas frescas) because they harm the baby when breastfeeding. Oranges and cucumbers are her examples of cold foods. Also, she avoids beans and fats or greasy foods.

For all of her pregnancies, Luz María sought prenatal care from a doctor and specifically said it was for the monitoring for she and her baby (el control del bebe y mio). She said the doctor first ran tests (los análisis) and then gave her vitamins and a supplement powder that she mixes with water. She attended all of her monthly prenatal appointments for all pregnancies. In addition to Doña Nati and the doctor, Luz María also went to a sobadora who had been a midwife for many years for a sobada when she was five months pregnant. She went to the sobadora because she was having a different type of pain than she would normally visit Doña Nati for, and this woman’s technique is different.

Luz María does not have a good relationship with her mother and feels that her mother does not like her. Her parents and some siblings live three hours away by car and her other siblings are in the States. When she is not pregnant she goes once a month to visit her family. Since being pregnant, her mother has come once a month to visit her. Luz María says she is religious and prays two to three times a week. A cousin that she was close to was in a bad car accident in the previous year and lay in a coma for three months before finally dying. She has been upset about that, as well as upset with her sister for staying with a man she does not want to marry and having more children with him.

Despite being poor, raising three children without water and electricity, and feeling as though she isn’t liked by her mother, Luz María has low perceived stress, average pregnancy-related anxiety, and mid-range EBV antibody levels. Although she is very competent in the model of a good pregnancy (r=.86), Luz María has a low consonance score placing her at the 20th
percentile. Likewise, she is in the 30th percentile in traditional consonance. According to Luz María, she has an angry disposition and has been angry with her sister during the pregnancy and is worried that the baby may come out with an angry character like herself. Her mother-in-law warned that the baby may cry and have an angry disposition (sale llorono y corajudo). She also had a susto (scare) because she was unaware of an eclipse and did not protect against it. To ease her fears, she made a trip to the doctor to check that everything was okay. She has average perceived social support, but all of her social support is from family with no outside sources. Specifically, she said her husband or her in-laws provide all of her social support. Luz María feels they are financially stable and her husband is a great source of support for the pregnancy. Her daily diet is good, filled with fresh vegetables, fruits, grains, and protein. Until the last month of pregnancy, she made tortillas daily from nixtamel (lime-soaked corn meal).

Luz María’s low consonance seems to originate from her own perceived inability to meet her emotional responsibilities in pregnancy. Furthermore, her lifestyle may prevent her from being too consonant with the model because she has to perform strenuous chores, lives far away from family, and holds beliefs that require individual vigilance and monitoring. She reports not sleeping well very often, not being calm (due to her angry disposition), getting angry, worrying, and lifting heavy loads of laundry sometimes. Despite being less consonant with the model, Luz María’s stress levels are average or below average. Her life experience and age may afford Luz María a maturity that filters her perception and embodiment of stress.

**Belén - Copala**

Belén is 33 years old, has a ninth grade education, was recently married (eight months), and is pregnant with her first child. She lives in a three-bedroom house with her husband and two of her brother’s children. Her brother is in the States and, for the children’s expenses, he
sends money and she receives help from DIF through the Opportunities Program (Programa de Oportunidades). Belén jokes that she is practically related to everyone in town. Her parents are both deceased, but her father-in-law lives nearby and she sees her siblings every day. Belén reports having lots of support from relatives and friends, and she and her husband have money in the Caja Popular (People’s Cash, a savings and loan operative) in case they experience times of need. Belén’s husband works in the fields and she recently quit a job she had for 13 years and when I interviewed her was selling produce at the weekly market and candies from home. I saw her several weeks later when I visited and she had begun working at a clothing store in the plaza. Even though their household income had lowered since leaving her job, she is confident that they are financially secure for a baby. Despite her support and confidence, she has high perceived stress. Her physiological stress response is very low, though, in the 32nd percentile.

Doña Socoro, a midwife with IMSS, arranged the interview with Belén who is one of her clients. At ten weeks of pregnancy, and then again at 14 weeks, Belén had gone to Doña Socoro because she had a problem in her stomach, (un problema que traigo en el estómago). As treatment for the problem, Doña Socoro massaged her. She began biomedical treatment at nine weeks and will deliver in Ciudad Guzmán at the Regional Hospital (about an hour and 15 minutes from Copala). Her prenatal care and delivery will be covered by Seguro Popular. Belén is aware that she and the baby are Rh incompatible, but the doctor has told her everything is fine and not to worry. However, her PRA is a bit above average, which is not uncommon for a first-time mother.

Belén and her husband were still newlyweds and appear to have a loving relationship. He drove her the short distance to the interview at Doña Socoro’s house. While we were all sitting together, we were discussing pregnancy and how the body can feel tired, about hurt and tired
feet, and the need to rest. I heard later through Doña Socoro that Belén was very thankful for our conversation in front of her husband because he had been very attentive to her since then, helping with the cooking and cleaning, and massaging her feet on a regular basis. This is his first child as well. In the interview, Belén told me that she is the head of the household.

Belén prays daily, gets adequate rest during the day and eats well, although she reports not sleeping well at night and getting angry quite often (laughing about it in the interview). According to the PSS, she feels a lack of control of her life, and although she is very competent in the model, her overall consonance is quite low. Traditionally, however, she is very consonant, and has utilized both a midwife and a doctor for her prenatal care to allay her concerns. The subjective stress measures for Belén are high, but her physiological stress response is low. This could be due to the buffering of physiological stress response to psychosocial stressors during pregnancy, but it could also be a result of living in a tightly knit community where she has the support of neighbors, friends, and family, and feels that she has economic security.

**Fina - Tecalitlán and San Isidro**

Fina is 28 years old and lives with her husband and two small children in Tecalitlán. She has been with her husband for nine years and they have lived there for four years, but split time between Teca and San Isidro, as many people from the village do. Her husband is a beekeeper and doesn’t make a lot of money. She told me that the bees were dying that year and it was hard. In their home in Teca they have only a kitchen area and living room that doubles as a bedroom. Fina spends between four to eight hours a day doing housework and tending to the children. The oldest goes to primary school, but the youngest is still at home.

The family now has Seguro Popular and she will have the child at the Regional Hospital in Ciudad Guzmán (about an hour drive from Teca). Her first pregnancy ended in a miscarriage.
in San Isidro. Another child was born at five months but lived for a little while, even cried a little. That child was born with the aid of Doña Chelo, a midwife and the Health Auxillary at the Health House in San Isidro. Fina referred to both of these children as her “hermalitos” – a phrase commonly used for babies who have passed away. Her oldest son was also born with Doña Chelo in San Isidro, but her youngest son was born with a private doctor in Teca. With her other pregnancies she also visited Doña Linda, another midwife in San Isidro, and has been to see her the three times she has been in San Isidro with this pregnancy. Fina has to return to San Isidro for her prenatal appointments because that is where she is registered as a resident on her insurance. The drive is about an hour and a half, most of it on a winding dirt road through the mountains. A doctor in Teca, also referred to as a male-midwife by Fina, treated her for a vaginal infection at four months of pregnancy and massaged her at that time.

After I left Fina’s home, I went next door to visit with a woman I had met in San Isidro and who was a good friend of Evita. This woman told me that Fina’s husband had been having an affair and that he had given Fina the vaginal infection, and that she knew about the other woman. Fina told me herself that her husband had been an alcoholic and had just quit drinking three months ago, at the time she got the infection. Her perceived stress is very low, but given her marital situation, she may have been glossing over her feelings. She has low PRA as well. She was not worried about her pregnancy and felt that she and the baby would be fine as she was already into the seventh month and past the point where she had miscarried before. Fina’s EBV antibody levels are very high. However, she showed no signs of a current infection and her CRP levels were normal and not elevated, indicating no acute infection at the time. Therefore, it is very likely that the events of the preceding months with her husband’s affair, and years of alcoholism have contributed to her stress, despite the prenatal buffering effect. She is very
consonant traditionally and in the 72nd percentile of overall consonance. In Fina’s case, being consonant with a good pregnancy probably does not have as much influence on her prenatal stress levels as does her home situation.

**Claudia – Ciudad Guzmán**

When I went into a local store in Ciudad Guzmán to buy the medical supplies for the blood samples, the pregnant woman behind the counter asked what I was doing. I explained the study and she said she would like to participate, and so I acquired my first wealthy, educated participant. Claudia is 31 years old and has been with her husband for six years. They live in a two-story, three bedroom home with their eight-year-old son. The downstairs of the home has a living room and a separate kitchen with all modern appliances (e.g., coffee maker, microwave, toaster, refrigerator, etc.). Together, they own and operate a medical supply store from the front of the home and live in the rest of the house. The business is lucrative and brings in substantial income, thus her SES is very high. Claudia handles the administrative aspects of the business such as bookkeeping, as well as deals with clients and sales, and works about 48 hours a week. In addition, she spends about five hours a day cooking and cleaning. She is very conscious about what they eat and enjoys preparing healthy meals for the family. She was participating in regular exercise, but has slowly decreased her walking during the pregnancy and now says she has too much to do to exercise. Her son has his own room upstairs with bunk beds, television, toys and games, and an X-box. They also have a computer with internet service in the house. The family has one car at the moment since they got rid of her car, but her husband also has a motorcycle. Both she and her husband graduated from college, Claudia with a law degree. She and her husband share household decisions and he helps care for their son. When she gets bigger with the pregnancy, she will hire someone to clean the house.
They live in Ciudad Guzmán with only her father-in-law in town. Her parents live in Guadalajara, but she sees them twice a month and is very close to them. She also stays in regular contact with her siblings and good friends and has high perceived social support from family and friends. During her first pregnancy, she lived at home with her parents because her husband was out of town working. Her son was born by cesarean at ISSSTE, where she was insured through the university. She is now seeing, and will deliver with, a private doctor. Claudia has heard that having a sobada is bad and she told me she does not have trust in a midwife, but then added that she really did not know. At a dinner I hosted for friends at Thanksgiving, Claudia met Evita (my research assistant, a nurse and a midwife) and decided she would like to have a consultation with her. I do not know if that happened as I left the country shortly thereafter.

On the PSS and PRA scale, Claudia scored very low, around the sixth percentile on both. Her cultural competence in the model of a good pregnancy is low, primarily because she does not believe in many of the traditional items. It is likely that she knows the traditional elements, but does not endorse them. In being consonant with both the overall and traditional models, she is average, near the 50th percentile on both. However, Claudia’s physiological stress is higher than most participants, in the 79th percentile. She has not had an illness during the pregnancy and showed no symptoms of current illness. In her personal life, she has been upset in the past year because her parents are getting divorced after decades of marriage, but she told me she had come to peace with it and was no longer concerned because they both seemed happier. Claudia works long hours even though her business is in the home, and said that their expenses had increased over the past year. Her lifestyle is very untraditional, much more Western than most Mexicans. Perhaps living as untraditionally as she does contributes to her underlying stress.
Outwardly, she and her family are happy and enjoy their lifestyle. The new baby is a source of excitement for everyone.

*María José – Tonalá*

Thirty-year-old María grew up in Tonalá in the neighborhood Jauja, but spent six years in San Francisco, California where she graduated from high school. She has three children who have different fathers and, until 17 months ago, she was receiving help from her youngest child’s father. That money stopped when she started dating another man, a relationship that ended sometime over the past year. María stopped taking birth control pills when she and her boyfriend broke up because she was no longer having sex, but one night she gave in to the advances of an intoxicated man and ended up pregnant. She is now seven months pregnant and the father moved in with her four months ago, but does not contribute money to the household, although he works as a truck driver. In the past month, María asked him to start helping with the rent and bills, but so far he has not. She says she is the head of the household and owns a small lunch stand where she makes and sells lunches and juices. At the lunch stand she works 28 hours a week and spends another seven or so cleaning house and caring for the children. María is on her feet about 11 hours a day, but says she can take a rest if she needs to.

This is her fifth pregnancy. One of her pregnancies resulted in a miscarriage after a neighbor in San Francisco hit her. Her mother is a midwife and delivered all of her other children, although she went to each of her medical appointments as well. For her last child, she planned to deliver at the New Civil Hospital and went there in labor, but it was full so she came back to Tonalá and delivered in her mother’s birth center (*posada de nacimiento*). Jauja is approximately 30-45 minutes by car from the hospital and 1-1 ½ hours by bus. Although her
mother is a midwife, María does not think sobadas are good and does not get them from her mother. Instead, she visits her mother much like she would a doctor, for a checkup.

María was near tears several times during the interview as she described how stressed she is and how worried she is about bringing another baby into the household when she only earns $50US every two weeks. Her mother watches the kids during the day when they come home from school while she works her lunch stand, and she is at her mother’s home daily. Her perception is that she does not get much support, although she has an average perceived social support score. Almost a year ago, María had a disagreement with a sister that she loves very much and they have not spoken since, causing much emotional strain for her. Furthermore, she feels distanced from the rest of her siblings (six in the area) because of the falling out and sees no solution to the problem. She used to pray daily, but now she prays only two or three times a month.

Because she is so stressed, María smokes and drank alcohol once or twice a week up until two months ago. The fact that she is still smoking (1-2 cigarettes a day) and drank during her pregnancy worries her. Also due to her nerves, she takes medicine for colitis and antacids. She has also recently developed asthma and uses an inhaler. She does exercise daily, however, walking for an hour in the open land, and has an adequate diet. María’s PRA is very high, in the 83rd percentile; she is worried about how her actions have affected the baby. She frequently gets angry and says her other daughter was born with an angry disposition (corajuda) because she felt alone and was angry during that pregnancy because the father didn’t help her emotionally or economically. Not surprisingly, María’s PSS score is in the 94th percentile and she is in the 83rd percentile with her EBV antibody levels. Thus, she is both psychosocially and physiologically stressed. Her competence in the cultural model is high ($r$=.88), but she has the second lowest
consonance score of the 88 participants and only makes the 6th percentile in traditional consonance. María has experienced a lot of hardship over the years, the last two years having been especially difficult. She does not want this baby because she does not think she is financially secure, does not have the support of the fathers of her children, and feels estranged from her family. All of these conditions contribute to María’s elevated perceived and latent stress levels.

*Beatriz – Ciudad Guzmán*

Beatriz (29 years old) and her husband have been together for seven years and have two children, with no miscarriages. They live in a one bedroom home as a nuclear family. Her husband works in construction, but also performs with a Mariachi band, affording them a mid-range SES, though the income fluctuates depending on how many jobs he gets each month. At the time of the interview, Beatriz was on “bedrest,” which meant she was not supposed to be moving around the house and so was spending her days sitting. This causes her some distress as she is not accustomed to sitting all day and is dependent upon her sister-in-law to do the household work. She feels like an old lady, she says. Her parents live two doors down from them, but her mother had undergone surgery the week before and was in bed, causing Beatriz to worry. Usually, her mother helps care for the children.

With her daughter, she developed toxoplasmosis. The child, now four, was born developmentally slow, both physically and mentally. Beatriz attributes her problems to a susto she experienced during the pregnancy. A neighbor’s child fell to the ground and gashed her head open and started convulsing. Beatriz and neighbors accompanied the child to the Red Cross. She was so frightened by the whole ordeal that she started having mild contractions, and also forgot to eat. At first, she did not make the connection between her daughter’s condition and her
susto until another woman told her how her baby was born very small because of her stress from a divorce. Beatriz and her husband are able to send her daughter to a school for special needs children, which is a great relief to her because the school has helped the girl reach several milestones and taught Beatriz how to foster her learning at home.

I met Beatriz through Doña Chucha, who took me to meet her. Beatriz initially came to Doña Chucha during her first pregnancy after hearing from another woman in the waiting room at the IMSS clinic that she could help alleviate discomfort. She has since visited Doña Chucha with each pregnancy. In this pregnancy she has visited her once in her sixth month because she had pain and was uncomfortable. Doña Chucha massaged her entire body, listened to the baby’s heartbeat, and recommended vitamins. All of her children were born at IMSS and this baby will be born there as well. Beatriz also saw Doña Chucha in the postpartum, saying she wanted a soba because she felt bad and it felt so good before during the pregnancy (me faja a gusto). Postpartum, Doña Chucha massaged the womb, looked at the umbilical cord, and put a binding around the babies’ abdomens (fajarlas). Beatriz says it is good to see the doctor, though, because of the prenatal care.

Despite her disdain at being sedentary and her expressions of stress, Beatriz’s perceived stress is the lowest score of the entire sample. Her PRA is also low (27th percentile) as are her EBV antibody levels (14th percentile). She has high perceived social support citing her parents, in-laws, and neighbors as resources and she has experienced no stressful life events in the preceding year. Her mother’s surgery went well, and she is not sick and will recover soon. Beatriz is of average competence in the model (49th percentile), but she has consonance score in the top one-fourth of the sample. Traditionally, she is not as consonant, at around 50 percent.
Thus, Beatriz has a middle class lifestyle, with mid-range SES, low psychosocial and physiological stress, and just above average consonance.

**Viviana – Zapotitlán de Vadillo**

Viviana is the only participant from a rural area who has high SES. Zapotitlán de Vadillo is a cabecera, but is very small and isolated and most of the people who live there are rural poor. Originally from a smaller ranchito, 23-year-old Viviana married a wealthy young man eight months ago and said her major life change in the past year is the huge increase in available income from marrying into a wealthy family. Her husband works for the family furniture business, making and delivering furniture. They live with her mother-in-law next door to the business. The house has three bedrooms and a spacious living room and kitchen area with ornate tile flooring. Since Christmas is near, the house is decorated and has a Christmas tree. The kitchen has cabinets, stone countertops, a modern stove and range, microwave, blender, and refrigerator. There is even a large, wooden dining table, probably a product of the family furniture store. When I first came in, Viviana was watching satellite TV (cable is not available in ZDV) on a 4 and a half foot flat screen television set. A computer sat on a desk nearby. We interviewed in the living room, each sitting on a couch. There are several cars in the family, including one for Viviana, and several trucks for the business. Her husband gives her US$200 a week for spending money. Viviana spent one semester in preparatory school, and then went to beauty school and got her beautician’s license.

This is Viviana’s first pregnancy and they are in the process of getting insurance through IMSS, so she will deliver there when the time comes. As is typical of the participants with available funds, she goes to the local Health Center for appointments, but has also been to a private physician in Ciudad Guzmán (almost two hours by car). She is on “bedrest” at the
moment because she had a kidney infection early in pregnancy and began to show signs of miscarrying. Currently, she is six months pregnant. They have hired a young girl to clean the house since she cannot do much housework, although she still spends about two hours cooking during the day. Viviana does think that midwives are helpful during pregnancy, but she has not seen one and does not plan to see one. She does not, however, think that the sobada is beneficial. She is worried about the eclipse that passed during the pregnancy, even though she protected herself with safety pins and a red sash. The gynecologist in Ciudad Guzmán told her not to worry and it was okay.

In the town, Viviana has no relatives or friends and feels lonely, but she speaks with her family every day by phone and sees her mother once a week, and her siblings two to three times a month. She prays several times a week and watches mass on television once a week. In the past year she and a friend ended a relationship that has caused her some distress. She also has a person close to her who has been incarcerated. She would like to have her friends close by to talk to and give advice, but she is able to speak to them by phone on a regular basis. Her perceived social support score is average.

Unfortunately, Viviana’s EBV levels were too low to use in the analysis indicating she is seronegative. Subjectively, Viviana perceives herself stressed with a PSS in the 71st percentile. As a primipara on bedrest with complications, her PRA is understandably in the 73rd percentile. Despite above average competence in the model (r=.86), her consonance in the model is just above the median, in the 64th percentile. Traditionally, Viviana is quite consonant, landing in the 80th percentile. Viviana is young and has experienced quite a life change in the past year: getting married, becoming wealthy, and getting pregnant. She says she has total support from her
husband. Despite their wealth, they live a mixture of Western and traditional lifestyles evidenced by both beliefs and behaviors.

**Conclusion**

The seven case studies presented in this chapter demonstrate the varying degrees of modernization, health care, prenatal care, beliefs, and practices found in this small region of Mexico. Each woman is both equipped with a cultural lens through which her thoughts and behaviors are filtered, and an individual circumstance that makes it possible, or not, to act accordingly. Life stresses contribute to and result from an inability to achieve a culturally congruent pregnancy, whether the barriers are manifested in social relationships, the political-economy, or the individual psyche. The stories of these women exhibit hardship and happiness, and tell a tale of managing pregnancy in a dynamic sociocultural climate.

1. Water is delivered once or twice a week and cost US$2 per 5-gallon container. Coca-Cola is the most prevalent parent company, although some local companies exist as well.
CHAPTER FOURTEEN: UNPACKING THE INTRICACIES OF CULTURAL CONSONANCE AND STRESS

Introduction

The hypothesis of this research is that women who are more consonant in a cultural model of a good pregnancy will have less psychosocial and physiological stress, and that social support moderates this effect. Thus far in this dissertation, the quantitative bivariate results have shown that being more culturally consonant with the shared model of a good pregnancy is significantly associated with perceiving less stress, but not significantly associated with pregnancy-related anxiety or Epstein-Barr Virus antibody levels. Perceived social support is not significantly associated with stress, anxiety or cultural consonance, but participants who report more social interaction with kin perceive more pregnancy-related anxiety and have higher cultural consonance scores. Multivariate analyses were performed in SPSS 16.0 to further examine and understand the relationships between the primary dependent variables (PSS, PRA, and EBV), predictor variables, and covariates. In this chapter, the regression models and analyses are presented with each of the three stress measures as dependent variables and consonance as a predictor, controlling for a host of covariates. Interaction terms are entered into the analyses to better understand the moderating effects of the social support variables in the equation. Interaction terms are considered significant if the Beta for the term has a p-value<0.2 (J. Cohen 1988).
Perceived Stress and Cultural Consonance

One goal of this study is to better understand the relationship between cultural consonance and stress, and to determine whether cultural consonance, or lack of it, with model of a good pregnancy can predict stress. A more in-depth multivariate analysis was performed with this goal in mind. First, a linear regression model was examined with perceived stress as the dependent variable, then one more regression model tested for an interaction between social support and cultural consonance with a good pregnancy. Table 14.1 gives the bivariate correlations between the variables entered into the regression analyses.

Age is measured in years. Marital status denotes not being single (0) and being single (1). Site was broken into a set of dummy variables: not urban (0)/urban (1), not ranchito (0)/ranchito (1). The reference group, semi-urban/cabecera, is captured in the “0” of the reverse coding of the dummy variables. Estimated gestational age (EGA) is measured in months. A total count of stressful life events (SLE) are included only if they occurred in the previous year. Perceived social support (PSCS) is for all support, including from family, friends, neighbors, compadres, DIF or other governmental agencies, and other sources (such as a doctor). Perceived support from family (PSF) is only support from family members. Perceived support from non-family is support from friends, neighbors and compadres. Cultural consonance in a good pregnancy (CCGP) is the final predictor variable.
<table>
<thead>
<tr>
<th>Variable</th>
<th>PSS</th>
<th>Age</th>
<th>Marital Status</th>
<th>Urban</th>
<th>Ranchito</th>
<th>EGA</th>
<th>SLE</th>
<th>PSCS</th>
<th>CCGP</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSS</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.11</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>.18**</td>
<td>.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>.25**</td>
<td>-.04</td>
<td>.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranchito</td>
<td>-.21**</td>
<td>.14</td>
<td>-.12</td>
<td>-.33***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGA</td>
<td>-.21**</td>
<td>.07</td>
<td>.00</td>
<td>-.03</td>
<td>-.08</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLE</td>
<td>.25**</td>
<td>-.08</td>
<td>-.01</td>
<td>.19**</td>
<td>-.10</td>
<td>-.16*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSCS</td>
<td>-.07</td>
<td>.01</td>
<td>.08</td>
<td>-.19**</td>
<td>.13</td>
<td>-.15*</td>
<td>.16</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>CCGP</td>
<td>-.47****</td>
<td>-.09</td>
<td>-.27***</td>
<td>-.44****</td>
<td>.09</td>
<td>.27***</td>
<td>-.37****</td>
<td>.02</td>
<td>1.00</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:
- PSS=Perceived stress score
- Marital Status=single (1), not single (0)
- Urban=Living in an urban area (1), non-urban area (0)
- Ranchito=Living in a ranchito (1), non-ranchito (0)
- EGA=Estimated gestational age
- SLE=Stressful life events
- PSCS=Perceived social support
- CCGP=Cultural consonance with a good pregnancy

*p<.10  
**p<.05  
***p<.01  
****p<.001
Table 14.2 gives the standardized coefficients from all of the regression models. The covariates entered into block 1 are: age, marital status, the dummy variables of living in an urban area and living in a ranchito, estimated gestational age and stressful life events. Cultural consonance is entered into block 2.
Table 14.2. Regressions of perceived stress (PSS) on study variables (standardized coefficients) (N=88).

<table>
<thead>
<tr>
<th>Variable $^a$</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4$^d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.064</td>
<td>-.117</td>
<td>-.116</td>
<td>-.125</td>
</tr>
<tr>
<td>Marital Status</td>
<td>.164</td>
<td>.057</td>
<td>.065</td>
<td>.051</td>
</tr>
<tr>
<td>Urban</td>
<td>.156</td>
<td>-.004</td>
<td>-.019</td>
<td>-.011</td>
</tr>
<tr>
<td>Ranchito</td>
<td>-.131</td>
<td>-.157</td>
<td>-.151</td>
<td>-.153</td>
</tr>
<tr>
<td>EGA</td>
<td>-.183*</td>
<td>-.093</td>
<td>-.103</td>
<td>-.085</td>
</tr>
<tr>
<td>SLE</td>
<td>.174*</td>
<td>.058</td>
<td>.070</td>
<td>.060</td>
</tr>
<tr>
<td>CCGP</td>
<td></td>
<td>-.408***</td>
<td>-.407***</td>
<td>-.449***</td>
</tr>
<tr>
<td>PSCS</td>
<td></td>
<td>-.080</td>
<td>-.095</td>
<td>-.121</td>
</tr>
<tr>
<td>CCGP x PSCS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple R$^2$</td>
<td>.430***</td>
<td>.572***</td>
<td>.537***</td>
<td>.548***</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:

b. Consonance and social support variables standardized.

Marital status=single (1), not single (0)
Urban=Living in an urban area (1), non-urban area (0)
Ranchito=Living in a ranchito (1), non-ranchito (0)
EGA=Estimated gestational age
SLE=Stressful life events
CCGP=Cultural consonance with a good pregnancy
PSCS=Perceived social support

*p<.10  
**p<.05  
***p<.01  
****p<.001
The first regression model (final statistics shown in the column marked “Model 2”) has a correlation coefficient of .53, with a significant F change of \( p = .001 \). Controlling for a host of other variables, consonance explains approximately 10 percent of the perceived stress variance. The standardized coefficient for CCGP is -.357. Therefore, for every point increase in cultural consonance, there is a .357 decrease in PSS. The direction of the association is exhibited in the partial regression plot in Figure 14.1. In other words, women with higher cultural consonance scores have lower perceived stress scores. Thus, one part of the hypothesis has been validated. Being more consonant with a shared cultural model is associated with women perceiving themselves as less stressed, presumably because they are confident through their compliance with appropriate cultural behavior.

**Figure 14.1.** Partial regression plot of perceived stress regressed on cultural consonance controlling for age, estimated gestational age, marital status, site, and stressful life events.

To explore the question of whether social support moderates the effect of cultural consonance with a good pregnancy on PSS, an interaction term was developed to enter into the regression model along with standardized scores on the perceived social support scale and
cultural consonance measure. The interaction term (zconsonance x zsocial support) is not significant in the model and does not support the prediction that perceived social support negatively moderates the effect of consonance on perceived stress.

**Pregnancy-Related Anxiety and Cultural Consonance**

A linear regression model was run with pregnancy-related anxiety as the dependent variable. Table 14.3 gives the bivariate correlations between the dependent and independent variables for all of the regression models of pregnancy-related anxiety. Socioeconomic status (SES) is a composite variable created by principal components analysis. Pregnancies is the number of pregnancies a participant has had, including the current one. Prayer is a dichotomous variable representing whether a participant prays regularly (1) or not (0). Prayer was included in the model because women in the sample who pray regularly have lower PRA scores than women who do not pray regularly (t=1.99, p=.05).
### Table 14.3. Bivariate correlation matrix of the dependent variable pregnancy-related anxiety (PRA) and independent variables (N=88).

<table>
<thead>
<tr>
<th>Variable</th>
<th>PRA</th>
<th>Age</th>
<th>Marital Status</th>
<th>SES</th>
<th>Pregnancies</th>
<th>Prayer</th>
<th>CCGP</th>
<th>PSCS</th>
<th>PSF</th>
<th>PSNF</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRA</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.21**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.24**</td>
<td>-.07</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>-.27***</td>
<td>-.04</td>
<td>.37****</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnancies</td>
<td>-.02</td>
<td>.56****</td>
<td>-.23***</td>
<td>-.47****</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prayer</td>
<td>-.22**</td>
<td>.05</td>
<td>-.09</td>
<td>.12</td>
<td>-.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCGP</td>
<td>-.18**</td>
<td>-.01</td>
<td>-.20**</td>
<td>.14</td>
<td>-.13</td>
<td>.07</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSCS</td>
<td>-.12</td>
<td>-.00</td>
<td>.09</td>
<td>.37****</td>
<td>-.26***</td>
<td>.15*</td>
<td>-.01</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSF</td>
<td>.01</td>
<td>-.27***</td>
<td>.04</td>
<td>.08</td>
<td>-.35***</td>
<td>.01</td>
<td>.20**</td>
<td>.26**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>PSNF</td>
<td>-.09</td>
<td>.09</td>
<td>.08</td>
<td>.29***</td>
<td>-.08</td>
<td>-.168*</td>
<td>-1.3</td>
<td>.79****</td>
<td>.27***</td>
<td>1.00</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:
PRA=Pregnancy-related anxiety
Marital Status=Single (1), not single (0)
SES=Socioeconomic status
Pregnancies=Number of pregnancies
Prayer=Regular prayer (1), no regular prayer (0)
CCGP=Cultural consonance with a good pregnancy
PSCS=Perceived social support
PSF=Perceived social support from family
PSNF=Perceived social support from non-family

*p<.10
**p<.05
***p<.01
****p<.001
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3a</th>
<th>Model 3b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.195</td>
<td>-0.181</td>
<td>-0.180</td>
<td>-0.185</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-0.208*</td>
<td>-0.271**</td>
<td>-0.288**</td>
<td>-0.294**</td>
</tr>
<tr>
<td>SES</td>
<td>-0.202</td>
<td>-0.164</td>
<td>-0.109</td>
<td>-0.146</td>
</tr>
<tr>
<td>Pregnancies</td>
<td>-0.054</td>
<td>-0.085</td>
<td>-0.080</td>
<td>-0.094</td>
</tr>
<tr>
<td>Prayer</td>
<td>-0.199*</td>
<td>-0.196*</td>
<td>-0.194*</td>
<td>-0.212**</td>
</tr>
<tr>
<td>CCGP</td>
<td>-0.214**</td>
<td>-0.184*</td>
<td>-0.235**</td>
<td></td>
</tr>
<tr>
<td>PSF</td>
<td></td>
<td>.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCGPxPSF</td>
<td></td>
<td>.217**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSNF</td>
<td></td>
<td></td>
<td>-0.026</td>
<td></td>
</tr>
<tr>
<td>CCGPxPSNF</td>
<td></td>
<td></td>
<td>-0.156</td>
<td></td>
</tr>
<tr>
<td>Multiple R</td>
<td>.435***</td>
<td>.480**</td>
<td>.523*</td>
<td>.504*</td>
</tr>
<tr>
<td>Multiple R²</td>
<td>.190</td>
<td>.231</td>
<td>.273</td>
<td>.254</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:

b. Interaction term is significant at p<.20
c. Consonance and social support variables standardized

Marital status=single (1), not single (0)
SES=Socioeconomic status
Pregnancies=Number of pregnancies
Prayer=Pray regularly (1), Don’t pray regularly (0)
CCGP=Cultural consonance with a good pregnancy
PSF=Perceived social support from family
PSNF=Perceived social support from non-family

*p<.10
**p<.05
***p<.01
****p<.001
Table 14.4 gives the standardized coefficients of the regression models. In the first regression equation (shown in the column marked “Model 3”), age, marital status, SES, number of pregnancies, and prayer were entered as covariates in block 1 and cultural consonance as a predictor in block 2. The model has a correlation coefficient of .480 and is significant at $p=.045$. After controlling for the other variables, consonance accounts for four percent of the variance. Thus, being consonant in a model of a good pregnancy appears to predict lower PRA scores (i.e., has a protective effect on anxiety) when controlling for a number of other factors (see Figure 14.2). For every point increase in cultural consonance, there is a .222 decrease in pregnancy-related anxiety.

![Figure 14.2. Partial regression plot of pregnancy-related anxiety regressed on cultural consonance controlling for age, prayer, socioeconomic status, marital status, and number of pregnancies.](image)
Being single has a significant positive influence on PRA in a bivariate analysis (t=1.96, p=.05), and remains significantly associated with lower PRA scores in the linear regression model.

![Boxplot of marital status and PRA scores]

**Figure 14.3.** Variation in pregnancy-related anxiety scores according to marital status.

A boxplot of marital status as a categorical variable (single, cohabitating, married) and PRA shows lower scores for single women, a higher mean for married women, and the highest mean for not married but with a partner. Perhaps having a partner (married or not) while pregnant predicts anxiety because of the influence of the partner’s increased anxiety.

Almost all women (n=70) report having support from their partners, however, partners themselves can be a source of anxiety since producing offspring is traditionally a valued accomplishment in Latin America for both men and women (Guttman 1996). Possibly due to pressures related to progeniture, men can be overbearing during pregnancy. For example, after one of the participants in Jiquilpan completed the interview, we were not able to obtain a blood
sample because we had run out of materials. We returned the next day and she gave us several excuses for why she could not do it (e.g., she was leaving and did not have time, her children needed her) before finally confessing that her husband was worried the fingerprick could affect the pregnancy because she had previously had a miscarriage. She nervously peered down the street and said he was at the corner watching the house. We left without the blood sample as we did not wish to cause a problem for her.

In addition to not having a partner, education likely influences single women’s PRA scores. The single women are, as a group (n=8), highly educated. More years of education, as discussed in chapter 12, are significantly correlated with lower PRA. It is, therefore, possible that higher education helps to explain a lower reported PRA.

Perceived social support has an inverse relationship with PRA (though not significant), therefore, a possible interaction effect was examined between consonance and social support on PRA. The regression model with the standardized scores for consonance and social support and the interaction term is not significant.

Two separate interaction effects were analyzed for family and non-family support. For participants who report higher perceived family support, the beneficial effect of cultural consonance on PRA is blunted (see Figure 14.4). Non-family support appears to enhance the effect of consonance on PRA, with those reporting more non-family support and higher cultural consonance having the lowest PRA scores (see Figure 14.5). In the regression models, the coefficients of both interaction terms are significant. Thus, perceived social support moderates the effect of consonance on PRA in different ways. If the perceived support from family is above average, then the effect of consonance is reduced. If the perceived support is from non-family, then the effect of consonance is enhanced.
Figure 14.4. Interaction of perceived social support from family and cultural consonance on pregnancy-related anxiety.

Figure 14.5. Interaction of perceived social support from non-family and cultural consonance on pregnancy-related anxiety.

The discrepancy between non-family support and high family support for pregnancy-related anxiety may have to do with the content of the PRA scale and what it is measuring. It is a
“contextually tied form of anxiety” (Rini et al. 1999: 334). The questions (see Appendix C) center on themes that are normally associated with potential anxiety during pregnancy, such as labor and delivery, high risk, and complications with the pregnancy or the baby. These topics are also favorite topics of discussion for anyone, usually other females, speaking with a pregnant woman. Having support from your family during pregnancy may actually increase the chance for having a discussion about the possibilities for problems, potentially resulting in increased anxiety. Furthermore, a pregnant woman has many responsibilities for maintaining a healthy pregnancy. This research identified approximately 38 items that Mexican women view as important for a good pregnancy, many of which the individual herself is personally responsible for accomplishing. Given that members of a culture share a basic cognitive framework for this model, it can be speculated that family members will also feel an obligation to remind the pregnant woman of her duties to achieve a good pregnancy.

Frequency of contact with the participant’s mother, mother-in-law, and sister, geographic proximity to family network, and coresidence with kin are elements comprising a family network scale of social interaction. Participants who have more interaction with their family network have significantly higher PRA scores. An interaction effect in the regression equation was also tested for consonance and social interaction, however, the interaction term did not near significance in the model. Despite this, and given the significant bivariate correlation, support from family may lead to more interaction with family members which, in turn, may lead to increased conversation about risks and complications as well as increased pregnancy management surveillance by family members. The greatest contribution of family support to a pregnant woman is positive, however, there can be negative psychosocial implications from family social support (Cramer and McDonald 1996). Again, in this research, high family support
tends to reduce the effect of consonance on PRA, non-family support tends to enhance the effect of consonance on PRA, and perceived social support does not moderate the effect of consonance on PSS in any form.

**Epstein-Barr Virus Antibody Levels and Cultural Consonance**

As explained in chapter three, Epstein-Barr virus antibody levels can be used as a measure of stress-related immunosuppression. A linear regression model was run with Epstein-Barr virus antibody levels as the dependent variable and age, marital status, site, coresidence with kin, number of people living in the house household and cultural consonance as covariates. Table 14.5 displays the bivariate correlations between the variables in the regression equation.
Table 14.5. Bivariate correlation matrix for the dependent variable Epstein-Barr Virus (EBV) antibody levels (squareroot) and the independent variables (N=63).

<table>
<thead>
<tr>
<th>Variable</th>
<th>EBV</th>
<th>Age</th>
<th>Marital Status</th>
<th>Urban</th>
<th>Ranchito</th>
<th>Coresidence</th>
<th>Household Members</th>
<th>CCGP</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBV</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.28**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.08</td>
<td>.01</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>.09</td>
<td>-.10</td>
<td>.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranchito</td>
<td>-.08</td>
<td>.15</td>
<td>-.12</td>
<td>-.38***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coresidence</td>
<td>-.43***</td>
<td>-.60****</td>
<td>.28**</td>
<td>-.25**</td>
<td>-.12</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Members</td>
<td>-.36***</td>
<td>-.09</td>
<td>-.09</td>
<td>-.06</td>
<td>.04</td>
<td>.30***</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>CCGP</td>
<td>.06</td>
<td>-.10</td>
<td>-.19*</td>
<td>-.41****</td>
<td>.10</td>
<td>.20*</td>
<td>.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:
EBV=Epstein-Barr Virus antibodies
Marital Status=Single (1), not single (0)
Urban=Living in an urban area (1), non-urban area (0)
Ranchito=Living in a ranchito (1), non-ranchito (0)
Coresidence=Lives with kin (1), does not live with kin (0)
Household Members=Number of individuals residing in household
CCGP=Cultural consonance with a good pregnancy (1=high consonance, 0=low consonance)
*p<.10
**p<.05
***p<.01
****p<.001
Epstein-Barr virus antibody levels were entered as the dependent variable and age, marital status, site, coresidence with kin, and number of people living in the house household were entered as predictors in block 1 and cultural consonance in block 2 (see Table 14.6). The model is not significant (p=.22). Social support did not have a moderating effect on EBV.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.072</td>
<td>.077</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.026</td>
<td>.014</td>
</tr>
<tr>
<td>Urban</td>
<td>-.047</td>
<td>.015</td>
</tr>
<tr>
<td>Ranchito</td>
<td>-.137</td>
<td>-.130</td>
</tr>
<tr>
<td>Coresidence</td>
<td>-.328*</td>
<td>-.358*</td>
</tr>
<tr>
<td>Household Members</td>
<td>-.252*</td>
<td>-.236*</td>
</tr>
<tr>
<td>CCGP</td>
<td></td>
<td>.162</td>
</tr>
<tr>
<td>Intercept</td>
<td>10.475</td>
<td>7.841</td>
</tr>
<tr>
<td>Multiple R</td>
<td>.508</td>
<td>.527</td>
</tr>
<tr>
<td>Multiple R²</td>
<td>.258***</td>
<td>.278</td>
</tr>
</tbody>
</table>

a. Variable abbreviations:

b. Consonance and SES are standardized

EBV=Epstein-Barr Virus antibodies

Marital Status=Single (1), not single (0)

Urban=Living in an urban area (1), non-urban area (0)

Ranchito=Living in a ranchito (1), non-ranchito (0)

Coresidence=Lives with kin (1), does not live with kin (0)

CCGP=Cultural consonance with a good pregnancy

*p<.10

**p<.05

***p<.01

****p<.001

Conclusion

Linear regression analyses were performed with the three stress variables (PSS, PRA, and EBV) as dependent variables and cultural consonance with a model of a good pregnancy (CCGP) as a predictor, controlling for a host of other factors. The regression models demonstrate that cultural consonance predicts lower levels of perceived stress and pregnancy-related anxiety, but does not have an identifiable relationship with physiological stress response in the form of Epstein-Barr Virus antibodies. Interaction effects were tested to determine if the social support
variables (social support and social interaction) moderated the effect of consonance on stress. The results show varying relationships.

Perceived social support and social interaction do not moderate the effect of consonance on PSS. Perceived social support in general does not moderate the effect of consonance on pregnancy-related anxiety. In the PRA model, women who perceive above average support from family and are more consonant have higher reported pregnancy-related anxiety than other women. This effect may be due to heightened surveillance by family members over the pregnant woman who, in part, will monitor her behavior to ensure compliance with prenatal management imperatives. Family members may also provide more discussion of complications and past negative experiences of themselves and community members during pregnancy. Perceiving non-family support tends to enhance the effect of being consonant with the model on pregnancy-related anxiety, such that women who report the most support from non-family members and have higher cultural consonance scores exhibit the most reduction in anxiety. Social interaction does not have a significant moderating effect on the influence of cultural consonance on PSS or PRA. Neither perceived social support nor social interaction significantly moderate the effect of cultural consonance on Epstein-Barr virus antibody levels. Perhaps living with more people increases individual exposure to other pathogens, thereby increasing overall viral load, including EBV.
CHAPTER FIFTEEN: DISCUSSION AND CONCLUSION

The objectives of this study were to determine: 1) if there is one or more models of pregnancy in an environment with both traditional and biomedical caregivers; and 2) to better understand the relationships among cultural consonance with a shared model of pregnancy, social support, and maternal stress. One shared cultural model of a good pregnancy was identified. The model had strong agreement by the non-pregnant participants in Phase I and was validated by the pregnant participants in Phase II. The model contains both biomedical and traditional elements that, in the unconstrained pile sorts, are ordered along a continuum from good to bad. Within this dimension, the cluster analysis revealed distinctions of emotional, physical, and nutritional components. However, apart from staying calm during pregnancy, most of the traditional elements do not carry the same weight of importance as the biomedical elements. Despite slight variation in belief in the traditional elements, most CCM items receive strong agreement above 70 percent. The cultural consensus model, then, demonstrates a blending of tradition and biomedicine into a single model of a good pregnancy.

The hypothesis that pregnant women who are more consonant with a shared model of a good pregnancy will have lower levels of psychosocial stress and altered immune response compared to women who are less consonant is only partially supported. Women who are more consonant with the model do have lower levels of psychosocial stress, measured as perceived stress (PSS) and pregnancy-related anxiety (PRA). However, cultural consonance does not have a significant relationship with EBV antibody levels.
McDade et al. (2007) argue that biomarkers provide a glimpse at the latent physiological adaptation that is missed when only subjective measures of health are implemented in population-based research. In this dissertation, psychosocial stress and the physiological stress response are not significantly correlated. It is possible that Epstein-Barr Virus antibody levels are not a marker of psychosocial stress in this sample, but a reflection of how stressed the immune system is in dealing with other pathogens. In other words, an index of individual exposure to other pathogens.

The individual perception of stress and anxiety may lead to an embodied physiological adaptation other than an altered immune response that is undetected in this dissertation. Although no physical expression of dissonance or dis-ease is reported here, psychosocial stress is a form of embodiment. Bodily monism (see, for example, Csordas 1994), supposes a wholistic organism, rejecting Cartesian mind-body dualism. The filter through which a person perceives stress is constructed of the material, social, political, economic, and cultural circumstance. Members of a group share the learned model that guides their cognitive and physical expression, however, individual agency informs the degree and manner to which a person embodies, perceives, and expresses their circumstance. The women who participated in this research illustrate how sharing in a cognitive model does not imply sharing in perception or behavior. Each woman is located within and embodies her individual daily existence.

The original hypothesis postulated that social support would moderate, or enhance, the effect of consonance on stress. Social support does not moderate the effect of consonance on PSS or EBV antibody levels. Perceived social support moderates the effect of consonance on PRA in varying ways. Non-family support enhances the effect of consonance on PRA. Family support also enhances the effect of consonance on PRA, unless the support from family is above
the mean. In this case, the effect of consonance is blunted. Reasons may include increased interaction with family members leading to increased discussion of fears and worries about the pregnancy, as well as a familial push to achieve a high level of individual responsibility, and thus consonance with a shared model of a good pregnancy.

S. Cohen (1988) describes the stress-centered model of social support in which negative health effects of stress are buffered by social support. In this particular model, S. Cohen (1988) discusses how the mechanism could be psychological such that support personnel may attenuate the intensity of the problem, or even distract from it by encouraging healthy behaviors. In pregnancy, however, the effect may be opposite. Most of the participants in this research report high perceived support from family. During pregnancy, the psychological effects of having that support from family may be opposite from other times in the lifespan because mothers and mothers-in-law, other female relatives, and husbands may over-emphasize the importance of individual responsibility to behave appropriately. In other words, family members may be more likely to “nag” a pregnant woman to take care of herself and take appropriate precautions. It is not hard to imagine female relatives at a family dinner giving advice on what foods can cause the baby to have problems. “Don’t eat the green mangos because they are too acidic, the baby will have colic.” Or after an eclipse passes, every woman in the family probably asks the pregnant woman if she wore safety pins, or put something red on. And what if she did not know the eclipse had occurred and she had not protected the baby? The talk may persist for months that the baby could have a cleft palate. Any one of these issues would be cause for anxiety due to heightened informational support, even if the woman does share in these beliefs. In fact, several of the participants told me that they did not believe that an eclipse could harm their baby, but because of a mother, mother-in-law or husband, they had worn silver or something red. Other
researchers have noted that, during pregnancy, family support can have negative effects on psychological stress (Cramer and McDonald 1996). To add to this, increased PRA is significantly associated with being a housewife and working from home (see Chapter 11). As I often observed in Guzman, the rural areas, and in Tonalá, women who are home all day tend to have daily interaction with each other and with family members, particularly other female relatives. Although social interaction and perceived social support are not significantly associated with EBV antibody levels, the more people a pregnant woman lives with, the higher her EBV levels. This may be due to increased exposure to pathogens, resulting in a higher allostatic load overall. In other words, elevated EBV levels may be an index of a stressed immune system, and not psychosocial stress. The immune system may be exposed to more pathogens and, therefore, more stressed when living with a larger number of individuals.

For many of the components identified as good or bad for pregnancy, it is important to note that they are largely the responsibility of the individual. Maintaining a good pregnancy is a responsibility in itself and very few items in the cultural model lie outside the domain of personal agency. Factors such as envidia (jealousy) and brujería (sorcery) that would place blame for complications somewhere else are no longer considered by most women as threats. Whether the imperatives involve emotional control, avoidance of certain foods, or other behaviors, most of them can be exercised by the individual. Even with an eclipse, a force beyond her control, it is the woman’s responsibility to protect herself. Support from family, support from the partner, having a partner, being married, and having economic security are outside of individual responsibility and may, therefore, also imbue a sense of loss of control over one’s circumstance. Thus, there may be several mechanisms that affect the relationship between cultural consonance
and stress, including lack of personal agency in issues outside of individual control and failure to control those actions that are within the domain of individual responsibility.

To conclude, there is one cultural model of a good pregnancy in southern Jalisco, Mexico. The model includes traditional and biomedical beliefs and behaviors. What little variation exists is found in agreement and adherence to traditional elements. The hypothesis of this dissertation was only partially supported. Cultural consonance with a shared model of a good pregnancy predicts lower levels of PSS and PRA, but is not associated with EBV antibody levels. Social support enhances the effect of consonance on PRA, unless family support is above the mean. Social support was not found to have a moderating effect on PSS or EBV antibody levels.

**Pluralism in Prenatal Care**

Crandon-Malamud (1991) argues that the concept of medical pluralism in anthropology addresses the fallacy of the assumption in the anthropological literature that modernization subsumes traditional medicine, leaving only one option. However, the concept continues to be employed to analyze medical traditions as bounded systems, and neglects to examine them as social institutions (Crandon-Malamud 1991). In the southern half of Jalisco, many people utilize both the traditional and the biomedical systems as sources of health care. As the cultural model of a good pregnancy shows, ethno- and bio-obstetrics are not distinct, separate systems in the cognitive domain of pregnancy for women of Jalisco. There is, however, a divide between agreeing with culturally appropriate care and behavior and acting on these beliefs. A brief assessment of the political economy of the pluralistic medical system demonstrates a possible link between insurance, access, and medical system.
Prenatal care is a unique facet of health care. It is one of the few areas in health care for which exceptions are made regarding insurance coverage and availability of care. In Mexico, prenatal care and delivery are available for all women. If a woman has insurance through one of the social security systems, she will be covered with that institution. In 2003, the government of Vicente Fox implemented the program Seguro Popular that makes health insurance available to the 50 percent of the population who did not previously have coverage and mostly paid out-of-pocket for health expenses. People do have complaints about the system, about the availability of doctors, the lack of prescription coverage, and other issues. During pregnancy, any uninsured woman may receive prenatal and delivery care within the system of the Ministry of Health for a minimal cost if she attends all of her prenatal appointments. Each urban-sized town (>2500) or cabecera has a Health Center that provides the prenatal care. For delivery, a woman may use the services of the Regional Hospital in Ciudad Guzmán, the Regional Hospital in Colima, or the New Civil Hospital in Guadalajara. In the cabeceras, a woman may have her baby at the Health Center, but most women in Zapotiltic, Zapotitlán de Vadillo, Tuxpan, Tecalitlán, and Pihuamo choose to travel to Ciudad Guzmán or Colima to one of the hospitals.

When I first talked with three midwives in Ciudad Guzmán in February 2006, they cited availability of free care and insurance as being one reason that the majority of women have their babies in the hospital. On average, the cost of a midwife for prenatal, delivery, and postnatal care is US$100-200, depending on the midwife (cf. hospital birth can cost anywhere from nothing to US$120, determined on a sliding scale for the uninsured and those with Seguro Popular). It is likely that cost, as well as changing paradigms of pregnancy to technology-centered pregnancy and birth, has contributed to the decline in midwifery-attended births over the past decades. As the cultural model identified in this research demonstrates, biomedical
prenatal care in general is perceived as necessary for a good pregnancy. However, this is not to the exclusion of traditional care.

This research also illustrates the link between the role of access and availability to health care, and the assimilation of a new authority in a cultural domain. In Guadalajara, Tonalá, Ciudad Guzmán, the cabeceras and some of the ranchitos, biomedical access is permanently available. Each has a Health Center and possibly an IMSS or ISSSTE clinic. Furthermore, the urban and semi-urban areas have the additional option of private hospitals. Private hospitals are small hospitals with approximately 10-20 beds, sometimes more. They are more expensive, but are viewed as providing better care by the women who can afford to have their babies there. Many of these hospitals are staffed with Catholic nuns, doctors, and nurses. As biomedical facilities have moved into the more rural areas, and as government programs have made the costs feasible for most families, more people are utilizing biomedical facilities for primary care, as well as prenatal care.

The midwives are no longer providing the primary obstetric service for the majority of women in Jalisco. Their services are sought for special issues, such as the sobada, vitamin injections, assessment of the pregnancy, moving and turning the baby, and folk illnesses. Many midwives are also curanderas, and prescribe teas and perform cleansings and prayers as needed. McClain (1975) and Sesia (1996) noted the use of varying degrees of bio-obstetrics and ethno-obstetrics in separate areas of Mexico. This research also found a pluralistic obstetric system. The cultural model of a good pregnancy identified with cultural domain analysis shows variation in belief and knowledge of both biomedical and traditional obstetrics. The prenatal management practices identified by the participants in this study, and the actual behavior of the participants (i.e., cultural consonance in the model of a good pregnancy) reveal a system with two, albeit not
equal, authorities. The authoritative knowledge of biomedicine appears to supersede, or take precedence over, the authoritative knowledge of the midwife. But the authority of the midwife on specific matters persists. Her authority on general matters of pregnancy continues to be sought based on principles of trust and confidence.

The practices of midwifery and obstetrics in Mexico have a star-crossed path. They have been brought together, while at the same time polarized, for the past 150 years. Roughly 60 years ago, the government decided to incorporate midwifery into obstetric services, seeking to educate midwives, especially in rural areas, in basic bio-obstetric methods, such as administering pitocin shots to speed labor, using a fetoscope, and prescribing prenatal vitamins. Anthropologists (Sargent and Bascope 1997; Sesia 1997) have written on the pitfalls of these programs, pointing out that the ethno-obstetric methods already used by the midwives were rarely credited or incorporated, or even inquired about, by the “teachers.” Sargent and Bascope (1997) discuss how, in some cases, the pregnant women and their families do not want the bio-obstetric care from the midwife, but desire the ethno-obstetric services instead. Indeed, in the sample from Jalisco in this project, the midwife was not requested for bio-obstetric care, but for her own special knowledge. Finkler (2000) notes that biomedical doctors practice their own forms of Mexican biomedicine, incorporating ethnomedical factors (such as emotions) in the etiology of illnesses. Despite this, biomedical doctors and government health institutions have waged their own campaign against midwifery by characterizing the sobada as dangerous and potentially lethal to mother and baby. Informally, some doctors discount the knowledge and training of midwives privately to their patients, discouraging them from visiting a midwife. Thus, midwifery persists in part because of government inclusion while, at the same time, the biomedical authority has slowly discredited and undermined the ethno-authority of midwifery.
What are left today are women who are admittedly confused and uninformed about what a midwife can do and whether she is truly knowledgeable in matters of pregnancy and birth. This confusion is illustrated by the high agreement of women in the sample that midwives are helpful and the prenatal massage is good for the baby, but the low use of a midwife or prenatal massage. In contrast, almost all participants have received regular biomedical prenatal care. One participant in Ciudad Guzmán told me that she did not think midwives were helpful, but then she said she really did not know anything about them and had never met one. Again, midwifery now tends primarily to specific complaints and issues, and not usually for general overall care.

It could be argued that there is a certain stigma involved in seeing a traditional caregiver, that perhaps it denotes ignorance and a backwards way of living, or lack of education. Morris and Venkatesh (2000) note that the acceptance of science as an absolute truth accompanies modernism. Women of higher SES in the study are less likely to have seen a midwife and think a midwife is good for pregnancy than other women. However, instead of arguing that midwives are intentionally not chosen to be caregivers, especially among women of lower SES and in the rural areas, I would argue that government programs and biomedical availability make the use of biomedical caregivers almost necessary. Economically, it is cheaper to receive prenatal care from, and deliver with, a biomedical doctor. The authority of science and medicine further justifies the economic advantage of biomedicine because of the morality of individual responsibility to seek the best care, that is, the scientific care. Even the most rural areas of the world have not escaped the hegemony of biomedical authority.

In many places, including Mexico, traditional practitioners are brought in when biomedical doctors have failed to find the cause and cure. An example of this comes from a family I met in Ciudad Guzmán. As I interviewed a pregnant woman one day in her home, my
eyes kept wandering to the emaciated young woman lying on the bed in the front room. As the story was told to me, Frida, the young girl in her late teens or early twenties had gone to a neighboring state, Michoacan, to live with a relative and work. While there, she fell in love with a young man whom she dated for several months. He began to have an affair with another young woman who became very jealous of Frida and performed an act of sorcery to get rid of her. The young man left Frida for the other woman and Frida returned home heartbroken. Soon after returning she fell ill and lost her appetite, and began losing weight. Her family took her to doctor after doctor as Frida continued to lose weight and become weaker. She cried often and wanted to get better. The doctors tested her for HIV, tuberculosis, and many other infections and finally diagnosed her with cerebral palsy. Given that she had never had symptoms before this moment in her life, the family remained skeptical. After exhausting their biomedical resources, they began searching for other answers through traditional practitioners. They had seen several curanderos, with no luck as well. Finally, as I was leaving the country, they decided to solicit the services of a man reputed to have the knowledge of sorcery. His fees were very expensive, approximately US$50 for each session, for a total of 4-5 sessions, but the family felt that they had exhausted all other resources for a cure. This story illustrates the chain of decision-making of just one family. They first went to biomedicine for the answers and persisted with biomedicine until they got no results. Only after biomedicine did not work did they then begin to seek traditional care. Although not as dramatic, the reasons given for visiting a specific healer, such as for the sobada (see chapter 8), demonstrate the perception that biomedicine lacks the ability to address certain aspects of prenatal care.

In Phase I of the research, I asked if brujeria, or sorcery, was an important issue during pregnancy. This question opened up discussions about whether or not sorcery existed. Some
people told me matter-of-factly that sorcery is not a problem for pregnancy, usually, unless someone was angry with you. Others vehemently denied the existence of sorcery, saying that was an old way of thinking. A medical student told me that she was taught many women still believe in sorcery as a potential threat during pregnancy. However, only one of 53 participants in the Phase I interview said they had experience with either jealousy or sorcery. Perhaps because of the admonition against sorcery by the church, the topic is secret and taboo for discussion with an outsider. Sorcery and other traditional beliefs may be losing validity in the Mexican culture as science and biomedicine continue to gain authority in all matters of life. As Wertz and Wertz (1989) pointed out, science has taken over the role of moral authority from religion. Because so many traditional beliefs are inherently religious, whether through Catholicism or indigenous beliefs, the validity and authority of these beliefs is slowly being questioned and dissipated by the scientific authority.

**Conclusion**

Medical pluralism does denote more than one medical tradition simultaneously functioning within the social institution of medicine, however, the authority of the different traditions vary. Perhaps in this type of system, knowing the traditional elements and behaving accordingly are stimulated by different motivating factors. As has been highlighted by the disparity between consonance with the traditional elements, socioeconomic status, and stress, many other political economic factors are involved in deciding when to seek traditional ethno-obstetric care. Structural relationships are defined by power, as well. These relationships may be on the micro-level between family members, or they may be macro-level relationships surrounding the individual in her specific sociocultural and political-economic context (Handwerker 1990). The decision-making is not strictly a preference choice, but an economic
one further informed by availability and access, as well as personal resources such as education and social support. Oths (1994) documents a shift in the factors involved in treatment choice during times of economic hardship in highland Peru. There, people tended to save their resources for only the most serious illnesses and, although traditional and biomedical use dropped, traditional use decreased more than biomedical use (Oths 1994).

Knowledge and behavior in the cultural model of a good pregnancy in Jalisco are not synonymous. Many women know the model, but far fewer women behave accordingly. Furthermore, not everyone knows the same elements of the model. Women in the ranchitos have varying knowledge largely influenced by availability of care and diversity of the population (e.g., range of ages). Consonance with the model also appears to be influenced by access and availability, in addition to where a person lives and the general social class of the area in which the individual lives an everyday existence. Low consonance with the model of a good pregnancy predicts higher perceived stress and pregnancy-related anxiety. Social disparities are intertwined with a plethora of structural barriers that prohibit uniform consonance with a cultural model of a good pregnancy. Despite the intracultural variability in both consonance and competence in the cultural model, one cultural model for a good pregnancy that blends both biomedicine and tradition does exist in southern Jalisco, and an overwhelming majority of women know the model and agree with it. As culture changes over time, the model will likely change as well, shifting authority from one power to another. In the pluralistic domain of health care, the power of the authority of traditional medicine has already been reallocated from all aspects of pregnancy management to care for specific complaints for which biomedicine has no therapeutic answer.
There is hope for continuation of midwifery in Mexico today and, thus, hope that future generations of Mexican women may have access to both types of prenatal caregivers. Mexico has increasingly moved toward the technocratic model of birth, as evidenced by their high cesarean rates. The first accredited midwifery school opened in the state of Guanajuato at CASA, the Center for Adolescents of San Miguel de Allende, in the mid-1990s. The midwives are trained as professionals with biomedical training and a traditional apprenticeship. Since the founding of CASA, several non-governmental organizations have developed their own training programs. The Department of Traditional Medicine and Intercultural Development was created in 2002 and is in charge of a Ministry of Health initiative to provide indigenous women with the type of birth they desire (WHO 2008). In 2006, the Mexican government passed a law requiring government and government institutions to respect traditional knowledge. The state of Veracruz recently passed a law giving women the right to live free of “obstetric violence,” such as unnecessary cesareans (WHO 2008). Perhaps these developments of government recognition of the validity and benefit of traditional practices, such as midwifery, will increase prenatal care and birthing options for women throughout Mexico. Already, there is a small “alternative” movement, primarily in urban centers, of women who desire a natural, non-technological birth. Indeed, one highly educated professional woman in Guadalajara with whom I spoke said she had asked her obstetrician for names of midwives who might help her have a home birth. She was told there were none. Two other women in Ciudad Guzmán told me that their sisters had elected to have “natural” childbirths with a midwife.

Women in Jalisco cite biomedical and traditional ways of knowing about pregnancy. They participate in both types of prenatal care in their personal pregnancy management practices. Both bio-obstetric and ethno-obstetric practitioners could be helped to provide culturally-
appropriate prenatal care by knowing what women know and want in pregnancy, and understanding that, for the women themselves, these elements of the cultural model are legitimate and necessary concerns. Practitioners need to understand women’s concerns and be able to discuss and address them. They also need to be aware of each individual woman’s circumstance, of her everyday existence, to understand that her social reality can affect her ability to have the type of pregnancy she believes is good. Her specific circumstance, dictated largely by greater political-economic forces, is interpreted through a cultural lens that affects her perceptions of stress. The stress becomes embodied and, in turn, affects maternal health.
REFERENCES CITED

Adetunji, Jacob A.  

Anderson, Sandra V., and Eleanor E. Bauwens  

Arms, Suzanne  

Arney, William Ray  

Baer, Hans A.  

Baer, Roberta D., Susan C. Weller, Javier E. Garcia de Alba Garcia, and Ana L. Salcedo Rocha  


Baker, Paul T., and Michael A. Little, eds.  

Belizán, Jose M., Fernando C. Barros, and Sophie Alexander  
Bennett, Vivienne  
   Pittsburgh: University of Pittsburgh Press.

Berkman, Lisa F.  
1995  The Role of Social Relations in Health Promotion. Psychosomatic Medicine, Special  
   Issue: Superhighways for Disease 57(3): 245-254.

Berkman, Lisa F.  
2000  Which Influences Cognitive Function: Living Alone or Being Alone? Lancet  
   255(9212): 1291-1292.

Berkman, Lisa F., Glass, T., Brissette, I., and T. E. Seeman  
2000  From Social Integration to Health: Durkheim in the New Millenium. Social Science  

Berlin, Brent, and A. Kimball Romney  
1964  Descriptive semantics of Tzeltal numeral classifiers. In A. Kimball Romney and Roy  
   D'Andrade, eds. Special Issue, “Transcultural Studies of Cognition,” American  
   Anthropologist 66:79-98.

Berlin, Brent, Dennis E. Breedlove, and Peter H. Rave  

Berlin, Elois A. and Brent Berlin  
1996  Medical Ethnobiology of the Highland Maya of Chiapas, Mexico. Princeton, NJ:  
   Princeton University Press.

-----  
2005a  The Maya. In Encyclopedia of Medical Anthropology. Carol Ember and Melvin  

-----  
2005b  Diarrhea. In Encyclopedia of Medical Anthropology. Carol Ember and Melvin  

Bernard, Elois A.  
In press  Field methods in medical ethnobiology. In Ethnobiological Field Methods,  
   Special Issue of Field Methods. John Richard Stepp, ed.

Bernard, H. Russell  
2002  Research Methods in Anthropology: Qualitative and Quantitative Approaches. 3rd  
   Edition. Walnut Creek, CA: Alta Mira Press.
Bindon, James R., Amy Knight, William W. Dressler, and Douglas E. Crews  

Bindon, James R., Douglas E. Crews, and William W. Dressler  

Blake, Judith  

Bohannan, Paul  

Boone, Margaret S.  

-----  

Borgatti, Steven  

-----  

Breen, Dana  

Brindle, Eleanor  

Broadhead, W. Eugene, Berton H. Kaplan, Sherman A. James, Edward H. Wagner, Roger Grimson Schoenbach, Siegfried Heyden, Gosta Tibblin, and Stephen H. Gehlbach  

Brown, Judith K.  
Browner, Carole H.

-----

-----

-----

-----

Browner, Carole H., and Ellen Lewin

Browner, Carole H., and Nancy Press

Browner, Carole H., and Carolyn F. Sargent

CUSUR


Caldwell, John C.
Carillo, Ana Maria

Carillo, Hector

-----

Cassel, John

Cassel, John, Ralph Patrick, and David Jenkins

Challis, John R., Charles J. Lockwood, Leslie Myatt, Jane E. Norman, Jerome F. Strauss III, and Felice Petraglia

Chapman, Rachel R.

-----

-----

Chavez, Leo R., F. Allan Hubbell, Juliet M. McMullin, Rebecca G. Martinez, and Shiraz I. Mishra
Cházaro, Laura, and Paul Kersey

Chodorow, Nancy

Christenson, William N., and Lawrence E. Hinkle

Clark, Lauren

Clark, Margaret

Coberly, Russell W.

Coe, Christopher L., and Gabriele R. Lubach

Cohen, Jacob

Cohen, Jeffrey

Cohen, Sheldon

Cohen, Sheldon, and G. Williamson  

Cohen, Sheldon, and S. L. Syme  

Cohen, Sheldon, B. Gottlieb, and L. Underwood  

Cohen, Sheldon, Tom Karmack, and Robin Mermelstein  

Cohen, Sheldon, R. C. Kessler, and L. G. Underwood  

Colby, Benjamin  

Collier, Jane F., and Michelle Z. Rosaldo  


Corea, Gena  

Cosminsky, Sheila  


Cramer, James C., and Katrina Bell McDonald

Crandon-Malamud, Libbet

Csordas, Thomas, ed.

Cunningham, F. Gary, Norman Grant, Kenneth Leveno, Larry Gilstrap III, John Hanth, and Katherine Wenstrom

DaCosta, D., J. Larouche, M. Dritsa, and W. Brender

D’Andrade, Roy G.


D’Andrade, Roy G., Naomi R. Quinn, S. B. Nerlove, and A. Kimball Romney
Daniulaityte, Raminta

Davis-Floyd, Robbie E.

-----

Davis-Floyd, Robbie E., and Carolyn F. Sargent

Decker, Seamus A., Mark V. Flinn, Barry G. England, and Carol M. Worthman

Dejin-Karlsson, Elizabeth, and Per-Olof Ogstergren

DeWalt, Kathleen Musant

de Weerth, Carolina, and Jan K. Buitelaar

DiGirolamo, Ann M., and V. Nelly Salgado de Snyder

DiPietro, Janet A., Kathleen A. Costigan, and Edith D. Guriwitsch

-----
Dorn, L., E. Susman, and A. Petersen  

Dos Santos, José Ernesto, Kathryn S. Oths, and William W. Dressler  

Dressler, William W.  
1982 Hypertension and Culture Change: Acculturation and Disease in the West Indies. South Salem, NY: Redgrave.

-----  

-----  

-----  

-----  

-----  

Dressler, William W., and James R. Bindon  

-----  
Dressler, William W., and José Ernesto Dos Santos  

Dressler, William W., Mauro C. Balieiro, and José Ernesto Dos Santos  

Dressler, William W., Mauro C. Balieiro, Rosane P. Ribeiro, and José Ernesto Dos Santos  


Dunkel-Schetter, C., L. Sagrestano, P. Feldman, and C. Killingsworth  

Durkheim, Émile  

Eisenberg, Leon  

Eggleston, Elizabeth  

Engel, George  

Engelmann, George J.  

Esterling, Brain A., Michael H. Antoni, Mahendra Kumar, and Neil Schneiderman  
1993 Defensiveness, Trait Anxiety, and Epstein-Barr Viral Capsid Antigen Antibody Titers in Healthy College Students. Health Psychology 12:132-139.
Fabrega, Horacio  

Fabrega, Horacio, and Daniel B. Silver  

Feldman, P. J., Dunkel-Schetter, C., Sandman, C. A., and P. D. Wadhwa  

Finkler, Kaja  

-----  

-----  

-----  

Folkman, S., R.S. Lazarus, Christine Dunkel-Schetter, A. DeLongis, and R.J. Gruen  

Ford, Clellan Stearns  

Forster, Lorna Earl, and E. Stoller  

Foss, L., and K. Rothenberg  

Foster, George  
-----

-----

Frake, Charles O.

Franco, Jean

Garcia de Alba Garcia, Javier Eduardo, Víctor de Munck, Ana Leticia Salcedo Rocha, Luis Alberto Vargas, and Trini Garro

2007 “Diabetes is my companion”: Lifestyle and Self-Management Among Good and Poor Control Mexican Diabetic Patients. Social Science and Medicine 64: 2223-2235.

Garro, Linda

Georges, Eugenia

Gil, Vincent E.
Ginsburg, Faye D., and Rayna Rapp, eds.

Glade, William P, Jr.


Glaser, Ronald, John Rice, John Sheridan, Richard Fertel, Julie Stout, Carl E. Speicher, David Pinsky, Mark Kotur, Alison Post, Melinda Beck, and Janice K. Kiecolt-Glaser

Glynn, Laura M., Christine Dunkel-Schetter, Calvin J. Hobel, and Curt A. Sandman

Glynn, Laura M., Christine Dunkel-Schetter, P.D. Wadhwa, and Curt A. Sandman

Glynn, Laura M., P.D. Wadhwa, Christine Dunkel-Schetter, A. Chicz-Dement, and Curt A. Sandman

González Ramírez, Mónica Teresa and René Landero Hernández

Gonzalez de la Rocha, M.
Good Maust, Marcia

Goodenough, Ward H.

Goodman, Alan H., and Thomas L. Leatherman, eds.

Greenhalgh, Susan

Gurung, Regan A. R., Christine Dunkel-Schetter, Nancy Collins, Christine Rini, and Calvin J. Hobel

Gutiérrez y Velasco, R.
1872 La Dystocia en México. Mexico: Imprenta de I. Escalante y Cía.

Guttman, Matthew C.

-----

Hahn, Robert A.

Hahn, Robert A., and Atwood D. Gaines
Handwerker, W. Penn

Harley, Kim, and Brenda Eskenazi

Harris, Olivia, and Kate Young

Hawkins, John

Henle, Werner, and Gertrude Henle

Herbert, Tracy Bennett, and Sheldon Cohen

Heron, J., T. O’Connor, J. Evans, J. Golding, and V. Glover

Higgins, Michael James
Hoffman, S., and M. C. Hatch  

-----


Holmes, T. W., and R. H. Rahe  

Homans, Hilary  

House, James, Debra Umberson, and Karl Landis  

Huber, Brad R., and Alan R. Sandstrom  

Hunt, R. C.  

IFE  

INEGI  

Ice, Gillian H., and Gary D. James  

Janes, Craig  
Jeffrey, Patricia, Roger Jeffrey, and Andrew Lyon

-----


Jenkins, Janis H., and Martha Valiente

Johnson, Thomas M., and Carolyn F. Sargent, eds.

Jordan, Brigitte

-----


Kammerer, M., D. Adams, B. von Castelberg, and V. Glover

Kana’iaupuni, Shawn Malia

-----


Kana’iaupuni, Shawn Malia, Katharine M. Donato, Theresa Thompson-Colón, and Melissa Stainback

Kay, Margarita Artschwager
Kearney, Michael  

Keenan, P., D. Yaldoo, M. Stress, D. Fuerst, and K. Ginsburg  

Kiecolt-Glaser, Janice K., Laura D. Fisher, Paula Ogrocki, Julie C. Stout, Carl E. Speicher, and Ronald Glaser  


Kiecolt-Glaser, Janice K., Susan Kennedy, Susan Malkoff, Laura Fisher, Carl E. Speicher, and Ronald Glaser  

Kitzinger, Sheila  

Kleinman, Arthur  

-----  

-----  

Knaul, Felicia Marie, and Julio Frenk  

Konner, Melvin, and Marjorie Shostak  
Kusnesof, Elizabeth

Laderman, Carol

-----

-----

Larson, M. R., R. Ader, and J. A. Moynihan

Lazarus, Ellen

Lazarus, R. S.

-----

-----

Lazarus, R. S., and S. Folkman

Leatherman, Thomas L.

Lefkarites, Mary P.
Leslie, Charles  

LeVine, Sarah Ethel  

LeVine, Sarah Ethel, Clara Sunderland Correa, and F. Medardo Tapia Uribe  

Lewin, Ellen  

-----  

Lewis, Oscar  

-----  

-----  

-----  

Limón del Toro, Marco Antonio  
2006 Mapa: Ciudad Guzmán. Ciudad Guzmán, Jalisco, Mexico: MDINC.

Lobel, M.  

Lobel, M., Christine Dunkel-Schetter, and S. C. M. Scrimshaw  
Logan, Kathleen

Logan, M. H.

Lomnitz, Larissa Adler

Lorber, Judith

Lovallo, William R.

Lustig, Nora

MDINC
2006 Mapa de Ciudad Guzmán. MDINC. Ciudad Guzmán, Jalisco: México.

MacCormack, Carol, ed.

Malinowski, Bronislaw

Martin, Emily

Marx, Karl

Marx, Karl, and Fredrick Engels
Masley, Kate Elizabeth
Cleveland, OH: Case Western Reserve University.

Mason, John W.

-----

Matthews, K. A., and J. Rodin

McClain, Carol

-----

McDade, Thomas W.

-----

-----

McElroy, Ann

Mead, Margaret, and Niles Newton
Metzger, Duane G., and Gerald E. Williams

-----

-----

Meyer, Michael C., William L. Sherman, and Susan M. Deeds

Mick, David Glen, and Susan Fournier

Miller, Elizabeth

Montagu, M. F. Ashley

Montoya, Rosario, Lessie Jo Frazier, and Janise Hurtig

Morris, M. G., and V. Venkatesh

Morsy, Soheir A.

Muñoz, Heraldo

Nacif, Benito
2005 Congress Proposes and the President Disposes: The New Relationship Between the Executive and Legislative Branches in Mexico. In Mexican Governance: From Single-

Nag, Moni

Nag, Moni, Benjamin F. White, and R. Creighton Peet

Napolitano, Valentina

Navarro, Marysa

Newton, Niles, and Michael Newton

Norbeck, Jane S., and N. J. Anderson

Norbeck, Jane S., and Margaret Lock, eds.

Norbeck, Jane S., and Virginia Peterson Tilden

Nuckolls, Katherine B., Cassel, John C., and Berton H. Kaplan.

Oakley, Ann


Obermeyer, Carla Makhlouf

Oliveros, Catherine, Grace Marquis, Rosario Bartolini, Gail Ormsby, and Emmanuel Rudatsikira

O’Neil, John, and Patricia A. Kaufert

Ortner, Sherry B.

Oths, Kathryn S.

-----


-----


Oths, Kathryn S., Linda Dunn, and Nancy Palmer

Paarlberg, K. Marieke, J.J. M. Vingerhoets, Jan Passchier, Gustaaf A. Dekker, Herman P. Van Geijn

Panter-Brick, Catherine

Park, C. L., P. J. Moore, R. A. Turner, and N. E. Adler

Parra, Pilar Alicia

Paulme, Denise, ed.
Pearlin, L. I.  

Pelto, Pertti J., and Gretel H. Pelto  

Penyak, Lee M.  
2003  Obstetrics and the Emergence of Women in Mexico’s Medical Establishment. The Americas 60(1):59-85.

Petchesky, Rosalind Pollack  

Petraglia, F., M. Hatch, R. Lapinski, M. Stomati, F. Reis, L. Cabellis et al.  

Poland, Marilyn L.  

-----  

Rabin, Bruce S.  

-----  

Redfield, Robert  


Reichert, Joshua

Rich, Adrienne

Rini, Christine Killingsworth, Christine Dunkel-Schetter, Pathik D. Wadhwa, and Curt A. Sandman

Roberti, Jonathan W., Lisa N. Harrington, and Eric A. Storch

Rogers, Everett M.

Romalis, Shelly

Romanucci-Ross, L.

Romney, A. Kimball, Weller, Susan C., and William H. Batchelder
Rondo, P. H. C., R. F. Ferreira, F. Nogueira, M. C. N. Ribeiro, H. Lobert, and R. Artes  
2003 Maternal Psychosocial Stress and Distress as Predictors of Low Birth Weight,  
Prematurity, and Intrauterine Growth Retardation. European Journal of Clinical Nutrition  
57(2):266-272.

Rosaldo, Michelle Zimbalist  
1974 Woman, Culture, and Society: A Theoretical Overview. In Woman, Culture, and  
Society. Michelle Zimbalist Rosaldo and Louise Lamphere, eds. Pp. 17-42. Standford,  
CA: Stanford University Press.

Rothman, Barbara Katz  

Rothstein, Frances Abrahamer  
2007 Globalization in Rural Mexico: Three Decades of Change. Austin: University of Texas  
Press.

Rubel, Arthur  
1966 Across the Tracks: Mexican Americans in a Texas City. Austin: University of Texas  
Press.

Rubel, Arthur J., and Carmella C. Moore  
2001 The Contribution of Medical Anthropology to a Comparative Study of Culture: Susto  

Rubel, Arthur J., Carl W. O’Nell, and Rolando Collado-Ardon  

SPSS  

Sable, M. R., and D. S. Wilkinson  
2000 Impact of Perceived Stress, Major Life Events, and Pregnancy Attitudes on Low Birth  

Saisto, T., R. Kaaja, O. Ylikorkala, E. Halmesmaki  
2001 Reduced Pain Tolerance During and After Pregnancy in Women Suffering from Fear  

Sargent, Carolyn F.  
1982 The Cultural Context of Therapeutic Choice: Obstetrical Care Decisions Among the  


Sargent, Carolyn F., and Grace Bascope

Sargent, Carolyn F., and Joan F. Rawlins

Schulte, H.M., D. Weisner, and B. Alloio

Seeman, Teresa E.

Seguin, Louise, Qian Xu, Louise Potvin, Maria-Victoria Zunzunegui, and Katherine L. Frohlich

Sesia, Paula M.

Seyle, H.

Sherraden, Margaret S., and Rossana E. Barrera
Shore, Bradd

Smith, Margaret Charles, and Linda Janet Holmes

Spencer, Robert

Stevens, Evelyn

Stewart, L.

Taylor, J. Edward

Terry, Martha Ann

Thomas, R. Brooke

Torres, M. Idali, and George P. Cernada

Tronick, E. Z., G. A. Morelli, and S. Winn
Tronick, E. Z., S. Winn, and G. A. Morelli  

Valdez Curiel, Enriqueta  

Valenzuela, Samuel J., and Arturo Valenzuela  

Vazquez Orozco, Jose Clemente  

Vieille, Paul  

Wadhwa, Prathik, D., Curt A. Sandman, M. Porto, Christine Dunkel-Schetter, and T. J. Garite  


Wagner, Marsden  

Weller, Susan C.  

-----  
Weller, Susan C., and A. Kimball Romney

Weller, Susan C., Lee M. Pachter, Robert T. Trotter II, and Roberta D. Baer

Weller, Susan C., Lee M. Pachter, Robert T. Trotter II, Mark Glazer, Javier Garcia de Alba Garcia, and Robert E. Klein

Wellman, Barry

Wertz, Richard W., and Dorothy C. Wertz

Wills, T.

Winston, Carla, and Kathryn S. Oths

Wolf, Eric R.

-----

Wolinsky, Frederic D.

World Health Organization

Worthman, Carol, and Catherine Panter-Brick
Young, Allan


-----

1983 The Relevance of Traditional Medical Cultures to Modern Primary Health Care. Social Science and Medicine 17(16):1205-1211.

Young, James C.

APPENDIX A

Informed Consent

You are being asked to take part in a research study. This study is about pregnancy in Mexico. The study is being conducted by me, Meredith Jackson. I am a doctoral student in anthropology at the University of Alabama in the United States. My supervisors are Dr. Kathryn Oths, a professor at the University of Alabama, and Dr. Javier de Alba Garcia and Dr. Ana Salcedo Rocha, investigators at the IMSS hospital in Guadalajara.

This study is being done to find out what is needed to have a healthy and good pregnancy in Mexico and to find out how events in a person’s life affect pregnancy and the baby. This knowledge will help doctors and midwives in Mexico better understand how to help women during their pregnancies. It will also help doctors in the United States help Mexican women living in the United States with their pregnancies.

You have been asked to take part in this study because as a woman you are knowledgeable about pregnancy. Additionally, this study seeks to include people from different areas of Guadalajara and the rest of Jalisco and you live in an area chosen to be included. There will be about 50 other people taking part in this study besides you.

If you decide to be in this study, you will be asked to answer questions about how to maintain a good pregnancy, what a woman needs during pregnancy, and how different things can affect pregnancy. The interview will take no longer than one hour. We can conduct the interview in a place where you feel most comfortable, such as your home or in a park and at a time that is convenient for you. For your time you will receive a small gift. There will be no cost or risk involved in participating in the interview. You may refuse to answer any questions that you do not want to.

I will be the only person to have your name. Your name will not be given out to any other person or organization. After the interviews are completed, your file will be given a number and your name will be deleted.

Taking part in this study is your choice and you may choose to stop at any time.

The University of Alabama Institutional Review Board (IRB) is the committee that protects the rights of people in research studies. The IRB may review study records from time to time to be sure that people in research studies are being treated fairly and that the study is being carried out as planned.

If you have any questions about the study right now, please ask them. If you have questions later on you may contact me, Meredith Jackson, at 341-11-57359. If you have any questions about your rights as a person taking part in this research study, you may call the Research Compliance Officer at UA at 001-205-348-5152.
Would you like to participate in this study?

The study has been explained to me. I understand what I will be asked to do. I freely agree to take part in it. I will receive a copy of this consent form to keep.

Signature of Research Participant

Date

Signature of Investigator

Date
Permiso Informado

Buenos Días/Tardes, me llamo ____________________. Soy una ___________________ (estudiante/promotora de salud/ayudante/trabajadora social) que está realizando un proyecto sobre el embarazo en Jalisco. ¿Te gustaría participar en el proyecto?

(SI NO ACEPTA PARTICIPAR) Gracias por tu tiempo. (Termine la entrevista)
(SI ACEPTA PARTICIPAR) Te leeré información con detalles del estudio. Por favor digame si está de acuerdo con todos los detalles.

Te invito a participar en una investigación académica y requiero de tu correspondiente permiso. Este estudio es para identificar qué es lo que se requiere para lograr un embarazo bueno en México; y a su vez, para encontrar cómo el estrés afecta al embarazo y al feto. Las Sras. Meredith Jackson y Eva Villanueva están realizando el estudio en el sur de Jalisco.

Si tú decidieses participar en este estudio, te haremos preguntas sobre cómo mantener un buen embarazo, el correspondiente tratamiento durante su embarazo. A su vez, también, te haremos preguntas sobre la casa/hogar y la familia, y sobre sus sentimientos y pensamientos sobre vida y el embarazo. La entrevista durará treinta minutos a una hora, más o menos. No hay un costo, ni riesgo que resulte en consecuencia por tu participación. Tienes derecho de no contestar alguna pregunta que no deseas responder; lo importante es que, las preguntas que sí desees responder, las contestes con absoluta honestidad. De otra manera, los resultados de la investigación de campo podrían no ser confiables, lo cual afectaría la validez de esta investigación científica. Las investigadoras, en este caso tus servidoras, son las únicas personas que tendrán acceso a tu nombre e información. Tu nombre no será dado a nadie ni a ninguna organización. Posteriormente a la realización de dichas entrevistas, tu nombre e información serán cambiados a un número, y, eventualmente, serán borrados/eliminados. Si tienes algunas preguntas sobre este estudio ahora mismo, o posteriormente, por favor pregúnteme. Finalmente, si así lo deseas, por favor sientete libre de contactarme telefónicamente. El número de teléfono de Meredith es (01) (341) 115 – 7359, celular y, el del hogar es (01) (341) 412 – 4688.

¿Te gustaría participar en este Estudio?
   Agradezco tu fina atención de la lectura del contenido de estas líneas.

Fecha: ___________________________________________
Lugar: ___________________________________________
Investigadora: ____________________________________
Numero de la participante: _________________________
Se me ha explicado el estudio y entiendo en lo que consistirá. Consciente de mi libertad doy mi consentimiento para participar. Recibiré una copia de esta forma.

<table>
<thead>
<tr>
<th>La Firma de Participante</th>
<th>Fecha</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>La Firma de la Investigadora</th>
<th>Fecha</th>
</tr>
</thead>
</table>
APPENDIX B

Interview Schedule

For the cultural domain analysis – Phase I:

Please list everything you can think of that is necessary for a good pregnancy.
Please list everything you can think of that is bad for a pregnancy.
Please list everyone who gives you support during pregnancy.
Please list everyone who helps with your other children.
Please list everyone who helps with the cooking.
Please list everyone who helps with the cleaning.
Please list everyone who helps with the daily household chores.
Please list everyone you can ask for advice.

What is a good pregnancy?

What happens to the body during pregnancy?

How does the baby grow?

What keeps the baby healthy?

What keeps the mother healthy?

What foods should you eat during pregnancy?
What foods should not be eaten during pregnancy?

Who helps the mother during pregnancy?
Who helps take care of the other children?
Who helps with the mother with household chores? Cooking? Childcare?
Who goes to prenatal appointments with the mother?

How does coraje (anger) affect pregnancy? The baby?
What can you do to ease the effects of coraje on pregnancy and the baby?

How does being asustada (frightened) affect pregnancy? The baby?
What can you do to ease the effects of susto on pregnancy and the baby?

How do nervios (nerves) affect pregnancy? The baby?
What can you do to ease the effects of nervios on pregnancy and the baby?
How do sentidos (emotions) affect pregnancy? The baby? What can you do to ease the effects of sentidos on pregnancy and the baby?

How does envidia (envy) affect pregnancy? The baby? What can you do to ease the effects of envidia on pregnancy and the baby? How can you avoid or ward off envidia?

How does mal de ojo (evil eye) affect pregnancy? The baby? What can you do to ease the effects of evil eye on pregnancy and the baby? How can you avoid or ward off mal de ojo?

How does an exhausted womb affect pregnancy? How does a womb become exhausted?

How does aire affect pregnancy? The baby? What can you do to ease the effects of aire? How can you avoid or ward off aire?

Can a baby inherit sickness from the mother during pregnancy? How does this happen? Are there ways to avoid this?

Is empacho (blocked stomach) bad for pregnancy?

How does blood pressure affect pregnancy?

Who does a pregnant woman see during pregnancy for care?

For what types of symptoms would you need to seek help from a doctor?

Are sobadas (prenatal massage) good for pregnancy? Who do you see for a sobada? Have you ever had a sobada during pregnancy?

What does a midwife do for the pregnancy? Do women visit midwives during pregnancy? Postpartum?

Why would you visit a curandera (traditional healer) during pregnancy?

Who does a pregnant woman call on or turn to in times of emergency? Who does a pregnant woman talk to when she is sad or upset?

Who can a pregnant woman ask for money or help if she is unable to pay for necessities, such as bills or food or clothes for your children?

What things are necessary for every day survival? For example, clothes, food, school supplies, etc.
Were you born with a doctor or partera or someone else?  
(if applicable) Please describe your pregnancy experiences.  
Who helped you with daily tasks?  
How often did you visit the doctor?  
Where did you deliver your baby?  
Did you visit a midwife during the pregnancy?  
After the delivery?  
Did you visit a curandera? A practicante? A yerbera?
Entrevista – Fase I

Para el análisis de los dominios culturales – El Fase I:

Por favor, hace una lista con todas las cosas que su piense son necesario por un buen embarazo.
Por favor, hace una lista con todas las cosas quu su piense son mala para el embarazo.
Por favor, hace una lista con todas las personas que darle apoyo durante el embarazo.
Por favor, hace una lista con todas las personas que ayudale con sus otros hijos.
Por favor, hace una lista con todas las personas que ayudale con el cocinando.
Por favor, hace una lista con todas las personas que ayudale con el limpiando de la casa.
Por favor, hace una lista con todas las personas que pueden ofrecer algún consejo.

¿Qué es un buen embarazo?
¿Qué pasa el cuerpo durante embarazo?
¿Cómo crece el feto?
¿Qué costumbres mantiene el sano del feto?
¿Cómo puede mantener la salud la embarazada?
¿Qué alimentos debe consumir durante el embarazo?
¿Qué alimentos no debe consumir durante el embarazo?
¿Quién ayuda la embarazada durante embarazo?
¿Quién ayuda la embarazada con el cuidado de sus otros hijos?
¿Quién ayuda la embarazada con el trabajo diario en la casa?
¿Quién ayuda la embarazada con el cocinando?
¿Quién acompaña la embarazada a sus citas prenatales?

¿Cómo afecta el embarazo el coraje?
¿Cómo afecta el feto el coraje?
¿Qué cosas hace usted para aliviar los efectos del coraje en el embarazo y el feto?

¿Cómo afecta el embarazo una embarazada asustada?
¿Cómo afecta el feto una embarazada asustada?
¿Qué cosas hace usted para aliviar los efectos de susto en el embarazo y el feto?

¿Cómo afecta el embarazo los nervios?
¿Cómo afecta el feto los nervios?
¿Qué cosas hace usted para aliviar los efectos de los nervios?

¿Cómo afecta el embarazo los sentidos de la embarazada?
¿Cómo afecta el feto los sentidos de la embarazada?
¿Qué cosas hace usted para aliviar los efectos de los sentimientos de la embarazada en el embarazo y el feto?

¿Cómo afecta el embarazo la envidia?
¿Cómo afecta el feto la envidia?
¿Qué cosas hace usted para aliviar los efectos de la envidia en el embarazo y el feto?
¿Cómo evita usted o se reguarda usted de la envidia?

¿Cómo afecta el embarazo el mal de ojo?
¿Cómo afecta el feto el mal de ojo?
¿Qué cosas hace usted para aliviar los efectos del mal de ojo en el embarazo y el feto?
¿Cómo evita usted o se reguarda usted del mal de ojo?

¿Cómo afecta el embarazo el aire?
¿Cómo afecta el feto el aire?
¿Qué cosas hace usted para aliviar los efectos del aire en el embarazo y el feto?
¿Cómo evita usted o se reguarda usted del aire?

¿Es posible por el feto a heredar la enfermedad desde la embarazada durante embarazo?
¿Qué pasa este?
¿Hay vías para evitarlo?

¿Empacho está mal para el embarazo?

¿Cómo afecta el embarazo el presión arterial?

¿Quién visita la embarazada para cuidado durante embarazo?

¿Qué tipos de síntomas hacen necesario cuidado del medico?

¿Son buenas las masajes o sobadas durante el embarazo?
¿Quién hace la sobada?
¿Recibió usted una sobada durante el embarazo?

¿Qué hace una partera durante el embarazo?
¿Visitan las embarazadas una partera durante embarazo?
¿Visitan las embarazadas una partera después el parto?

¿Porqué visita la embarazada una curandera durante embarazo?

¿Quién es la persona que la embarazada se solicita para ayuda durante una emergencia?
¿Quién plataca con la embarazada cuando ella está triste o turbada?
¿Quién se pregunta la embarazada para el dinero o la ayuda si ella no puede pagar por las cosas necesarias, tal como la comida o la ropa?
¿Qué cosas son necesario por la vida diario? Por ejemplo, la ropa, la comida, los provisiones escuelas.

¿Nació usted con un médico, una partera, or una otra persona?

(si está aplicable) Por cada embarazo:

Por favor, describe sus experiencias con embarazo y parto.
¿Quién ayudale con tareas diario?
¿Cada cuánto tiempo visitó usted el médico?
¿Donde fue el parto de su hijo?
¿Visitó usted una partera durante su embarazo?
¿Visitó usted una partera después el parto?
¿Porqué?
¿Visitó usted una curandera, or yerbera, or practicante durante el embarazo? Porqué?
APPENDIX C

Interview – Phase II
Cultural Models, Stress, and Pregnancy: Examining intracultural variation in southern Jalisco, Mexico

Participant ID: _________________ Date: ____________________
Week/Month of Gestation: ____________ Time: _____________________

Before we begin, I’d like to tell you that your answers and opinions will be given to no one. There are no correct or incorrect answers, I only want you to be honest. What you have to say is very important to the study. Some questions are delicate and private. All women in the study are asked the same questions. You do not have to answer any question you do not wish to. You may take a break for the bathroom or any other reason.

Sociodemographics
SD1. How old are you? _______

SD2. a. Are you married? YES / NO
b. If you are not married, do you have a partner? YES / NO
c. Do you live together? YES / NO
d. How long have you been together? _____________________________________

SD3. Where are you from? ___________________________________________________

SD4. What neighborhood do you live in? _____________________________________

SD5. a. How many years do you have in ________? ____________________________
b. Where else have you lived?
   _______________________________________________________________________

SD6. a. Do you have relatives in the United States? YES / NO
b. How many? _______________________

SD7. How many years did you go to school? _________________________________

SD8. How often do you exercise during the pregnancy (walk, for example)
   Daily/2-3 times a week/Once a week/2-3 times a month/Less than once a month
High Risk
I would like to ask you about your health.

AR1. Are you diabetic?  YES / NO / I DON’T KNOW

AR2. Do you have high blood pressure?  YES / NO / I DON’T KNOW

AR3. Do you have a heart condition?  YES / NO / I DON’T KNOW

AR4. Do you have asthma?  YES / NO / I DON’T KNOW
   (Yes) a. Have you taken medicine for you asthma during the pregnancy?  YES / NO
      b. What medicine?  __________________________________________

AR5. Do you have other serious problem or illness?  YES / NO / I DON’T KNOW
   (Yes) Please tell me what it is?  _________________________________

AR6. How is your health in general?  Poor / More or less average / Good

***IF THE PARTICIPANT ANSWERS YES TO ANY QUESTION (EXCEPT ASTHMA),
TERMINATE THE INTERVIEW ***
   Excuse me, I’m sorry, but this study only includes women with low risk pregnancies. We
will have to end the interview now. I hope that is okay. Maybe in the future you can participate
in another of our studies.

Household
This group of question is about your house, household and the people that live with you.

SD9. a. Do you work outside of the home?  YES / NO
     b. What do you do?  ___________________________________________
     c. Do you sell items from home?  YES / NO
     d. What do you sell?  _________________________________________

SD10. a. What does your husband do?  ______________________________
      b. Does he work in another place?  YES / NO
      c. Where?  __________________________________________________

SD11. a. How many people live in your house?  ______________________
      b. How many adults and how many children?  _______ Adults and _______ Children

SD12. How many people who live in the house work?  __________________

SD13. How many people contribute money to the household?  ________________

SD14. Please make a list of everyone in the house, their age, their job, and what they do in their job.
Person (mother, father, child...) | Age | Job | What they do in the job?
--- | --- | --- | ---

SD15. a. Do you have running water in the house? **YES / NO**
b. Do you have electricity? **YES / NO**

SD16. How many bedrooms are in the house? ______

SD17. a. Do you have a television? **YES / NO**
b. How many? ______
c. DVD? **YES / NO**
d. Radio? **YES / NO**
e. Cable? **YES / NO**
f. A computer? **YES / NO**

SD18. a. Does your family have a car? **YES / NO**
b. Does your family have a motorcycle? **YES / NO**
c. Is the car/motorcycle yours or does it belong to another family member? **Yo / Otra Familiar**

SD19. Who is the head of household?**
** **Yo / Mi esposo / Otra Persona**

**only if the participant has a job:**
I have other questions about your job.

SD20. What do you do in your job? _____________________________________________
__________________________________________

SD21. When was your last day of work? ____________________________

SD22. How many hours a week do you work? ______

SD23. How many hours a day are you on your feet? ____________

SD24. Can you take a rest if you need one? **YES / NO**

SD25. What are you daily household chores? ____________________________
__________________________________________

How many hours do you perform daily household chores? __________________________

**Prenatal History:**
Now I’d like to talk about your pregnancy and birth experiences.

PH1. Is this your first pregnancy? **YES / NO**

PH2. How many pregnancies have you had?  1  2  3  4  5  6  7  8  9  10  11  12

PH3. How many live births?  1  2  3  4  5  6  7  8  9  10  11  12

PH4. How many miscarriages?  1  2  3  4  5  6  7  8  9  10  11  12

PH5. a. How many children are living?
   Living  1  2  3  4  5  6  7  8  9  10  11  12
   b. How many children have died?
   Deceased  1  2  3  4  5  6  7  8  9  10  11  12

PH6. Who attended your birth – a doctor, a midwife, or other person?
   **Doctor / Midwife / Other Person – Who?** __________________________

Please, describe your pregnancy and birth experiences.

PH7. When you are pregnant, who helps with your daily chores?
   ________________________________________________________________

PH8. Where were the births of your other children? __________________________

PH9. Did you visit a midwife with your other pregnancies? **YES / NO**

PH10. a. Have you visited a midwife with this pregnancy? **YES / NO**
   b. When did you go (at what month)? ________________________________
   c. How many times? ______
   d. Why did you visit a midwife? ___________________________________
   _________________________________________________________________
   e. What did the midwife do? _______________________________________
      ______________________________
      _________________________________________________________________

PH11. a. Did you visit a midwife after your other pregnancies during the cuarentena?
   **YES / NO**
   b. Why? _________________________________________________________
      _________________________________________________________________
   c. What did the midwife do? _______________________________________
      _________________________________________________________________
PH12. Did you visit a doctor during your other pregnancies? **YES / NO**

PH13. a. Have you visited a doctor with this pregnancy? **YES / NO**
   b. When? ________________________________________________
   c. When did you first see a doctor (at what month)?
   _________________________________________________________
   c. How many times? ______________________________________
   d. Why did you visit a doctor? ______________________________
   _________________________________________________________
   e. What did the doctor do? _________________________________
   _________________________________________________________

PH14. a. Did you visit a sobadora during your other pregnancies? **YES / NO**
   b. If no, was there another person that gave you a sobada? **YES / NO** Who? ____________

PH15. a. Have you visited a sobadora with this pregnancy? **YES / NO**
   b. If no, was there another person that gave you a sobada? **YES / NO** Who? ____________
   c. When? ________________________________________________
   d. How many times?
   e. Why did you go for a sobada? ____________________________
   _________________________________________________________
   d. What did the sobadora do? ______________________________
   _________________________________________________________

PH16. What did you do during the cuarentena after your other births? ______________
   __________________________________________________________________________
   __________________________________________________________________________

PH17. a. Have you visited a curandera, yerbera, or practicante during your pregnancies
   (including this pregnancy)? **YES / NO** Which one? ________________
   b. Why? _________________________________________________________
   _________________________________________________________

PH18. a. Has there been an eclipse during this pregnancy **YES / NO**/I DON’T KNOW
   b. Did you protect the baby with a red sash, belt or cloth? **YES / NO**
   c. Did you take any other precaution? **YES / NO**
   d. What?
   e. Are you worried that the eclipse harmed the baby? **YES / NO**

**Social Support**
Now I am going to ask you questions about the support in your life.

SS1. How many relatives do you have in your neighborhood? ______________________

SS2. How many relatives do you have in the city/town/village?______________

SS3. How many relatives do you have in the state?________________________________

SS4. Where do your parents live?__________________________________________

SS5. Where do your siblings live?__________________________________________

SS6. Where do your in-laws live?__________________________________________

SS7. How often do you visit your mother?____________________________________

Daily/2-3 times a week/Once a week/2-3 times a month/Less than once a month

SS8. How often do you visit a sibling?_____________________________________

Daily/2-3 times a week/Once a week/2-3 times a month/Less than once a month

SS9. a. Are you religious? **YES / NO**
    b. Do you pray? **YES / NO**
    c. How often do you pray?

Daily/2-3 times a week/Once a week/2-3 times a month/Less than once a month

SS10. Who loves you?_______________________________________________________

SS11. Who takes care of the children in your house?___________________________

SS12. Who cooks and cleans in your house?___________________________________

SS13. Do you receive money from your relatives in the United States? **YES / NO**

SS14. Do you receive any help from DIF? **YES / NO**
This group of questions is about your feelings, tell me the option that best reflects your true situation, taking into account the last month only.

**During the last month:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. How often have you felt affected by something that happened that you had not hoped for?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E2. How often have you felt unable to control the important things in life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E3. How often have you felt nervous or stressed?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E4. How often have you been sure about your ability to manage your personal problems?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E5. How often have you felt that things have gone well?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E6. How often have you felt that you cannot confront everything that you have to do?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E7. How often have you lost control of the difficulties in life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E8. How often have you felt that you have control of everything?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E9. How often have you been fed up because things have happened outside of your control?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E10. How often have you felt that things pile up and you cannot overcome them?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Pregnancy-Related Anxiety**

These questions, like the others, are about your feelings. Please, tell me the option that best reflects your true situation.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>A lot</th>
<th>A whole lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. I am confident of having a normal childbirth.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E2. I have fear that the labor and birth will hurt.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E3. I have a lot of fear regarding the health of my baby.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E4. I am worried that the baby could be abnormal.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E5. I think my labor and delivery will go normally.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E6. I am worried about the development of the baby inside me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E7. I am worried about losing the baby.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E8. I am worried about having a hard or difficult labor and delivery.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E9. I am prepared to take care of a new baby.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E10. I am worried about developing complications during my pregnancy.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Now, there are more questions about social support. For each situation in the list, tell me all of the people that can help you.

<table>
<thead>
<tr>
<th>Situation</th>
<th>My relatives</th>
<th>My friends</th>
<th>My neighbors</th>
<th>My Compadres</th>
<th>DIF/The government</th>
<th>Other person (who?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I need a loan.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am anxious or upset.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Someone in my house has an illness.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a debt in my house.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I need advice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are inconveniences or disputes at work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am worried about my pregnancy and baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are inconveniences or disputes at home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I need money for food, clothes, or bills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cultural Domain Analysis – Interview Schedule:

Now, the following phrases are related to pregnancy. Please, tell me the answer that is your opinion:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>I agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.</td>
<td>It is important to eat well during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2.</td>
<td>Eating acidic things, like green mangos, are harmful during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3.</td>
<td>It is okay to smoke during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.</td>
<td>It is better to be married when you are pregnant.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5.</td>
<td>It is important to take vitamins during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.</td>
<td>The baby is affected if the mother doesn’t want it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E7.</td>
<td>It is harmful to do drugs during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E8.</td>
<td>Midwives help pregnant women.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E9.</td>
<td>Support from the partner is important for a pregnant woman.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E10.</td>
<td>Stress does not affect the baby or the pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E11.</td>
<td>Things with a cold quality are harmful during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E12.</td>
<td>It is important for a pregnant woman to rest.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E13.</td>
<td>A blow to the stomach is harmful during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E14.</td>
<td>A job is good, but working too much during pregnancy is bad.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E15.</td>
<td>The sobada is good for the pregnant woman and baby.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E16.</td>
<td>Economic security is necessary to have a baby.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E17.</td>
<td>When you worry during pregnancy, it harms the baby.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E18.</td>
<td>It is not important to have good physical health and exercise during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E19.</td>
<td>The baby is affected if the mother gets angry during the pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E20.</td>
<td>It is harmful to the baby if the mother consumes alcohol during the pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E21.</td>
<td>An eclipse harms the baby.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E22.</td>
<td>Support from the family is important for a pregnant woman.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E23.</td>
<td>The baby is affected if the mother is nervous during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E24.</td>
<td>An alcoholic husband is bad for a pregnant woman.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E25.</td>
<td>It is necessary to have a monthly check-up with a doctor during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E26.</td>
<td>Sometimes, a fright causes a miscarriage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E27.</td>
<td>It is not important to sleep well during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E28.</td>
<td>It is necessary for a pregnant woman to stay calm.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E29.</td>
<td>It is okay to lift heavy things when you are pregnant.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E30.</td>
<td>It is important to regulate your body temperature during pregnancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Stressful Life Events (in the past year)
The following questions are personal and possibly emotional. Please answer them truthfully. The information will be used for this study only and will not be given to another person or organization.

LC1. a. In the past year, has anyone close to you emotionally passed away? YES / NO
   b. Who? _______________________________________

LC2. Have you had a relationship that ended? (e.g., a spouse, friend, or relative) YES / NO

LC3. Have you, a relative, or anyone close to you emotionally been imprisoned? YES / NO

LC4. Have you, a relative, or anyone close to you suffered an illness or hurt? YES / NO

LC5. a. Have you, a relative, or anyone close to you emotionally been fired? YES / NO
   b. Or quit a job? YES / NO

LC6. Has there been a change in the financial situation of your household? YES / NO
   (Yes) Please explain it to me: __________________________________

LC7. Have you had an argument or problems with your family? YES / NO

Diet
Now we are going to talk about nutrition in general and your diet and what you have eaten in the last 24 hours.

*****For each food, if it is not by itself, ask them what was in the food and write everything that it contains*****

DT1. a. (in general) Do you take prenatal vitamins? YES / NO
    b. What brand? ____________________________________________
    c. How often? ____________________________________________

In the past 24 hours:
DT2. What did you eat for breakfast/lunch/dinner (depending on the hour of the interview)?
    _______________________________________________________
    _______________________________________________________
    _______________________________________________________

DT3. What did you eat for breakfast/lunch/dinner before that?
    _______________________________________________________
    _______________________________________________________
    _______________________________________________________

DT4. What did you eat between the two meals?
DT5. What did you eat for breakfast/lunch/dinner before that?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

DT6. What did you eat between the two meals?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

DT7. Did you eat or drink anything in the street? YES / NO
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

DT8. While you were watching television, did you eat or drink anything?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

***Ask the following questions if it was not mentioned in their answers***

DT9. In the last 24 hours, did you eat:
   a. Chicken YES / NO
   b. Beef YES / NO
   c. Pork YES / NO
   d. Goat YES / NO
   e. Fish YES / NO
   f. Seafood YES / NO
   g. Other meat YES / NO which? ____________________________________________

DT10. Did you eat beans? YES / NO legumes YES / NO

DT11. Did you eat yogurt? YES / NO, milk YES / NO, cheese YES / NO

DT12. Did you eat eggs? YES / NO

DT13. Did you eat tortillas? YES / NO
   What brand of tortilla?_____________________________________________________
   Did you eat tostadas? YES / NO

DT14. Did you eat bread? YES / NO
DT15. Did you eat candy/sweets?  YES / NO Junk food  YES / NO What?  

DT16. Did you eat rice?  YES / NO Another grain  YES / NO What?  

DT17. Did you drink juice  YES / NO Prepared or fresh?  

How often have you eaten the following during the pregnancy?:  

CCF1. chicken  
weekly/2-3 times a month/monthly/almost never/never  

CCF2. beef  
weekly/2-3 times a month/monthly/almost never/never  

CCF3. pork  
weekly/2-3 times a month/monthly/almost never/never  

CCF4. fish  
weekly/2-3 times a month/monthly/almost never/never  

CCF5. soy  
weekly/2-3 times a month/monthly/almost never/never  

CCF6. acidic foods  
weekly/2-3 times a month/monthly/almost never/never  

CCF7. cold temperature foods  
weekly/2-3 times a month/monthly/almost never/never  

CCF8. eggs  
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never  

CCF9. fruit  
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never  

CCF10. vegetables  
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never  

CCF11. rice  
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never  

CCF12. oats  
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never
CCF13. beans
daily/2-3 times a week/weekly/2-3 times a month/monthly/almost never/never

**Substance Abuse**

SA1. a. When did you last take medicine? ________________________
    b. What medicine? ____________________________
    c. Have you taken medicine during the pregnancy? YES / NO
    d. What medicine? ____________________________

SA2. How many cups of coffee do you drink a day? ________________________

SA3. How many cups of hot tea do you drink a day? ________________________

Black tea / Green tea / Herbal tea

SA4. How many soft drinks do you drink each day? ________________________

What brand? ____________________________

**Some of the following questions may be sensitive, remember that your sincere answers are a big help to this study***

SA5. a. When did you last smoke? ________________________
    b. How often have you smoked in the past year?
       daily/ 2-3 times a week / once a week / 2-3 times a month / once a month / 2-3 times a year / never
    c. Since the pregnancy, have you smoked? YES / NO
    d. How often?
       daily/ 2-3 times a week / once a week / 2-3 times a month / once a month / 2-3 times a year / never

SA6. a. When did you last drink alcohol? ________________________
    b. How often have you drunk alcohol in the past year?
       daily/ 2-3 times a week / once a week / 2-3 times a month / once a month / 2-3 times a year / never
    c. Since the pregnancy, have you drunk alcohol? YES / NO
    d. How often?
       daily/ 2-3 times a week / once a week / 2-3 times a month / once a month / 2-3 times a year / never

SA7. a. How often does your partner/husband drink alcohol?
       daily/ 2-3 times a week / once a week / 2-3 times a month / once a month / 2-3 times a year / never
    b. Is your partner/husband an alcoholic? YES / NO

SD27. What is your household income every two weeks (pesos)?
$0-$1500 / $1550 -$3000 / $3050 - $5000 / more than $5050

*Cultural Consonance (not included in the other parts)*
Now, we are almost finished. The last questions are about your experience with this pregnancy.

CC1. In your opinion, do you have the economic security to have a baby? 
   YES / NO

CC2. How often do you rest during a day? 
   5 times a day / 3 times a day / 2 times a day / 1 time a day / never

CC3. Are you calm?  always/almost always / sometimes / almost never/ never

CC4. a. At what temperature should you maintain your body during pregnancy?  
   Hot / Lukewarm / Cold
   b. Do you try to maintain your body at an adequate temperature?  
   always/almost always / sometimes / almost never/ never

CC5. Do you sleep well?  always/almost always / sometimes / almost never/ never

CC6. How often do you lift heavy things? 
   very often / often / sometimes / almost never / never

CC7. a. How often do you get angry?  
   very often / often / sometimes / almost never / never
   b. Have you been very angry during the pregnancy?  YES / NO
   c. Are you worried that this has harmed the baby?  YES / NO
   d. Are you worried that the baby will have an angry disposition because of what happened? YES / NO

CC8. In your opinion, do you have support from your partner during the pregnancy? 
   always/almost always / sometimes / almost never/ never

CC9. a. How often do you get frightened?  
   very often / often / sometimes / almost never / never
b. Have you had a strong fright during the pregnancy? YES / NO
c. Are you worried this has harmed the baby? YES / NO
d. Are you worried that the baby will have a nervous disposition because of what happened? YES / NO

CC10. a. Have you been hit during the pregnancy? YES / NO
   b. Are you worried that the blow harmed the baby? YES / NO

Symptoms:
Temperature: ________________

In the last week and today:
Have you had symptoms:
   of a cold/flu? YES / NO
   headache? YES / NO
   sore throat? YES / NO
   body aches? YES / NO
   cough? YES / NO
   fever? YES / NO
   diarrhea? YES / NO
   sneezing? YES / NO
   runny nose? YES / NO
   stomach pains? YES / NO
   nausea? YES / NO
   vomiting? YES / NO
   ear ache? YES / NO
   blurry vision? YES / NO
   breathing problems YES / NO
Have you been very tired? YES / NO
   dizziness or felt faint? YES / NO

***remember, give gift***

For the investigator
Hour at end: ______________ Duration of the interview: ______________
Location: ______________________________________________________
Do you think the participant answered all questions honestly? _________
If no, what questions were problems and explain.______________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

445
Other comments by the investigator:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
Encuesta de Fase II
Modelos cultural, el estrés, y los resultados del embarazo: Una examinación de la variabilidad intracultural en el sur de Jalisco, México

#ID de la participante: ________________ Fecha: ____________________
Semanas/Meses de la gestación: _____________ Hora: ____________________

Antes de iniciar, me gustaría decirte que no voy a dar tus respuestas u opiniones a nadie. No hay respuestas correctas o incorrectas, sólo tienes que expresar tus sentimientos y ser honesta. Lo que tú me digas es muy importante para el estudio. Algunas preguntas son delicadas o privadas. Les preguntamos a todas las mujeres embarazadas lo mismo. Por favor, dígame si no entiende una pregunta, o si necesita un descanso o ir al baño, o cualquier cosa.

**Sociodemográfica**

SD1. ¿Cuántos años tienes? ____________

SD2. a. ¿Estás casada? SI / NO
   b. ¿Si no estás casada, tienes una pareja? SI / NO
   c. ¿Viven juntos? SI / NO
   d. ¿Por cuantos años están juntos? ____________________________

SD3. ¿De dónde eres? ____________________________________________

SD4. ¿En qué colonia vives? ______________________________________

SD5. a. ¿Cuántos años tienes en ___________? ______________________
   b. ¿En qué otros lugares has vivido? _____________________________

SD6. a. ¿Tienes parientes en los Estados Unidos? SI / NO
   b. ¿Cuántos? ________________________________

SD7. ¿Cuántos años asististe a la escuela? __________________________

SD8. ¿Con qué frecuencia haces ejercicio durante tu embarazo? (caminar, por ejemplo) Diario / 2-3 veces a la semana / Una vez a la semana / 2-3 veces al mes / Menos de una vez al mes

**Alto Riesgo**

Me gustaría preguntarte sobre tu salud.

AR1. ¿Eres diabética? SI / NO / NO SE

AR2. ¿Tienes presión arterial alta? SI / NO / NO SE

AR3. ¿Tienes una enfermedad o condición delicada en tu corazón? SI / NO / NO SE

AR4. ¿Tienes asma? SI / NO / NO SE
(Sí) a. ¿Has tomado medicina de control durante el embarazo? SI / NO
  b. ¿Cuál medicina? ______________________________________________

AR5. ¿Tienes otra problema o enfermedad grave? SI / NO / NO SE
(Sí) ¿Dime que tienes, por favor? ______________________________________

AR6. ¿Cómo es en general tu salud? Pobre / Más o menos promedio / Bueno

***SI LA PARTICIPANTE CONTESTO SI A UNA PREGUNTA (EXCEPTO ASMA),
TERMINE LA ENTREVISTA***
Perdóneme, lo lamento, pero este estudio sólo incluye a mujeres con embarazos de bajo riesgo. Es decir, las mujeres que no tienen diabetes, presión arterial alta, o condiciones del corazón. Por lo anterior, debemos terminar la entrevista aquí. Ojala que estas bien con eso. Tal vez en el futuro pueda Ud. participar en otro de nuestros estudios.

El Hogar
Este grupo de preguntas es sobre tu casa, hogar, y las personas que viven contigo.

SD9. a. ¿Tienes trabajo afuera de la casa? SI / NO
  b. ¿En qué trabajas? ______________________________________________
  c. ¿Vendes cosas en la casa? SI / NO
  d. ¿Qué vendes? ________________________________________________

SD10. a. ¿Qué trabajo tienes tu pareja?
  b. ¿Trabaja en otro lugar? SI / NO
  c. ¿Dónde? _____________________________________________________

SD11. a. ¿Cuántas personas viven en tu casa? ______________
  b. ¿Cuántos adultos y cuántos niños? ________Adultos y _________Niños

SD12. ¿Cuántas personas de las que viven en tu casa trabajan? ______________

SD13. ¿Cuántas personas traen dinero a la casa? ______________

SD14. Por favor, haga una lista de cada persona que vive en la casa, su edad, su trabajo, y que hace en su trabajo.

<table>
<thead>
<tr>
<th>Persona (madre, padre, hijo,…)</th>
<th>Edad</th>
<th>Trabajo</th>
<th>¿Que hace en su trabajo?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SD15. a. ¿Tienes agua de llave/potable en tu casa? SI / NO
b. ¿Tienes luz en tu casa? SI / NO

SD16. ¿Cuántas recámaras tiene tu casa? ______

SD17. a. ¿Tienes una televisión? SI / NO
   b. ¿Cuántas? ______
   c. ¿DVD? SI / NO
   d. ¿Rádio? SI / NO
   e. ¿Cable? SI / NO
   f. ¿Una computadora? SI / NO

SD18. a. ¿Tiene tu familia un carro? SI / NO
   b. ¿Tiene tu familia un moto? SI / NO
   c. ¿El carro/moto es tuyo, o otro miembro de tu familia? Yo / Otra Familia

SD19. ¿Quién es la cabeza de tu hogar?
   Yo / Mi esposo / Otra Persona

**solamente si la participante tiene un trabajo:**
Tengo otras preguntas sobre tu trabajo.

SD20. ¿Qué haces en tu trabajo? ____________________________________________
       __________________________

SD21. ¿Cuando fue tu última día de trabajo? ________________________________

SD22. ¿Cuántas horas trabajas en una semana? _________

SD23. ¿Cuántas horas estás de pie cada día? _______________

SD24. ¿Puedes tomar un descanso si lo necesitas? SI / NO

SD25. ¿Cuáles son tus tareas diarias en casa? __________________________________
       _______________________________________________________________________
       _______________________________________________________________________

SD26. ¿Cuántas horas duran tus tareas diarias en casa?__________________________

La historia del embarazo:
Ahora, me gustaría platicar de tus experiencias del embarazo y parto.

PH1. ¿Es tu primero embarazo? SI / NO

PH2. ¿Cuántos embarazos has tenido? 1 2 3 4 5 6 7 8 9 10 11 12

PH3. ¿Cuántos hijos nacieron vivos? 1 2 3 4 5 6 7 8 9 10 11 12
PH4. ¿Cuántos abortos has tenido? 1 2 3 4 5 6 7 8 9 10 11 12

PH5. a. ¿Cuántos hijos vivos tienes?
    Viviendo 1 2 3 4 5 6 7 8 9 10 11 12
b. ¿Cuántos de tus hijos han muerto?
    Muertos 1 2 3 4 5 6 7 8 9 10 11 12

PH6. ¿Quién te ayudó durante el parto? —un médico, una partera, o otra persona?
    Medico / Partera / Otra Persona — ¿Quién?__________________

Por favor, describe tus experiencias con el embarazo y el parto.

PH7. ¿Cuándo estás embarazada, quién hace las tareas diarias?
___________________________________________________________________

PH8. ¿Dónde fueron los partos de tus otros hijos? ____________________________

PH9. ¿Visitaste una partera durante tus otros embarazos? SI / NO

PH10. a. ¿Has visitado una partera con este embarazo? SI / NO
    b. ¿Cuándo fueron? ________________________________________________
    c. ¿Cuántas veces? _____________________
    d. ¿Y porqué has visitado una partera?________________________________
    e. ¿Y qué hizo la partera? ___________________________________________
____________________________________________________________________

PH11. a. ¿Visitaste una partera después tus otros partos durante la cuarentena?
    SI / NO
    b. ¿Por qué? _____________________________________________________
    c. ¿Qué hizo la partera?_____________________________________________
____________________________________________________________________

PH12. ¿Visitaste un médico durante tus embarazos? SI / NO

PH13. a. ¿Has visitado un médico con este embarazo? SI / NO
    b. ¿Cuándo?
    c. ¿Cuándo empezaste a checar con un médico? (en qué mes del embarazo)?
    d. ¿Por qué has visitado un médico?______________________________________________
e. ¿Qué hizo el médico? ____________________________________________
__________________________________________________________________
__________________________________________________________________

PH14. a. ¿Visitaste una sobadora durante tus embarazos? SI / NO
b. Si no, ¿Hubo otra persona que te daba una sobada?__________________

PH15. a. ¿Has visitado una sobadora con este embarazo? SI / NO
b. Si no, ¿Has visitado otra persona para sobarte? SI / NO Quién?_________
c. ¿Cuándo? _______________________________________________________
d. ¿Cuántas veces?
e. ¿Cuál ha sido el motivo de que te soben? ___________________________
__________________________________________________________________
d. ¿Y qué hizo la sobadora? _________________________________________
__________________________________________________________________
__________________________________________________________________

PH16. ¿Qué hiciste durante la cuarentena después de tus otros partos? __________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

PH17. a. ¿Visitaste una curandera, o yerbera, o practicante durante tus embarazos
   (incluyendo este embarazo)? SI / NO Cuál?__________________________
b. ¿Por qué? _______________________________________________________  
   __________________________________________________________________
   __________________________________________________________________

PH18. a. ¿Ocurrió algún eclipse durante tu embarazo? SI / NO / No Sé
b. ¿Protegiste al bebé con una faja, franela, o cinta roja? SI / NO
c. ¿Tomaste alguna otra precaución? SI / NO
d. ¿Cuál?__________________________________________________________
e. ¿Te preocupas que le haya hecho daño al bebé? SI / NO

**Apoyo Social**
Ahora voy a preguntarte sobre el apoyo en tu vida.

SS1. ¿Cuántos parientes tienes en tu colonia? _____________________________

SS2. ¿Cuántos parientes tienes en la ciudad/el pueblo/el ranchito?______________

SS3. ¿Cuántos parientes tienes en el estado?______________________________

SS4. ¿Dónde viven tus padres?__________________________________________
SS5. ¿Dónde viven tus hermanos?

SS6. ¿Dónde viven tus suegros?

SS7. ¿Con qué frecuencia visitas con tu mamá?

Diario / 2-3 veces a la semana / Una vez a la semana / 2-3 veces al mes / Menos de una vez al mes

SS8. ¿Con qué frecuencia visitas a un hermano/a?

Diario / 2-3 veces a la semana / Una vez a la semana / 2-3 veces al mes / Menos de una vez al mes

SS9. a. ¿Eres religiosa? SI / NO
    b. ¿Rezas? SI / NO
    c. ¿Con qué frecuencia rezas?

Diario / 2-3 veces a la semana / Una vez a la semana / 2-3 veces al mes / Menos de una vez al mes

SS10. ¿Quién te quiere?

SS11. ¿Quién cuida los niños en tu casa?

SS12. ¿Quién cocina y limpia en tu casa?

SS13. ¿Recibes dinero de tus parientes en los EEUU? SI / NO

SS14. ¿Recibes una ayuda de DIF? SI / NO
Con este grupo de preguntas sobre los sentimientos, dígame la opción que mejor se adecuada a su situación actual, teniendo en cuenta el último mes.

**Durante el último mes:**

<table>
<thead>
<tr>
<th></th>
<th>Nunca</th>
<th>Casi nunca</th>
<th>De vez en cuando</th>
<th>Seguido</th>
<th>Muy seguido</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. ¿Con qué frecuencia ha estado afectada por algo que ha ocurrido inesperadamente?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E2. ¿Con qué frecuencia se ha sentido incapaz de controlar las cosas importantes de tu vida?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E3. ¿Con qué frecuencia se ha sentido nerviosa o estresada (lleno de tensión)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E4. ¿Con qué frecuencia has estado segura sobre tu capacidad de manejar tus problemas personales?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E5. ¿Con qué frecuencia has sentido que las cosas van bien?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E6. ¿Con qué frecuencia has sentido que no podía afrontar todas las cosas que tenías que hacer?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E7. ¿Con qué frecuencia has podido controlar las dificultades de tu vida?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E8. ¿Con qué frecuencia has sentido que tienes el control de todo?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E9. ¿Con qué frecuencia has estado enfadada porque las cosas que se han ocurrido estaban fuera de tu control?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E10. ¿Con qué frecuencia has sentido que las dificultades se acumulan tanto que no puedes superarlas?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### Ansiedad Relatado al Embarazo

Estas preguntas, son igual a las otras, son de sentimientos. Por favor, digame la opción que mejor se adecua a su situación actual.

<table>
<thead>
<tr>
<th>Pregunta</th>
<th>Nunca</th>
<th>Casi nunca</th>
<th>A veces</th>
<th>Mucho</th>
<th>Muchísimo</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. Tengo confianza en que mi parto será normal.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E2. Tengo miedo de que el parto sea muy doloroso.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E3. Tengo mucho miedo sobre la salud de mi bebé.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E4. Me preocupa que el bebé salga mal.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E5. Pienso que puedo aliviar normalmente.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E6. Me preocupó sobre el desarrollo del bebé dentro de mi cuerpo.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E7. Me preocupó que perdería el embarazo y el bebé.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E8. Me preocupa que no me pueda aliviar.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E9. Me preparo para cuidar al nuevo bebé.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E10. Me preocupo que se me vayan a desarrollar unas complicaciones durante mi embarazo.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Ya, hay cuestiones sobre apoyo otra vez. Para cada situación en la lista, dígame todas las personas que te ayudan.

<table>
<thead>
<tr>
<th>Situaciones</th>
<th>Mis Parientes</th>
<th>Mis Amigos</th>
<th>Mis Vecinos</th>
<th>Mis Compadres</th>
<th>DIF/El Gobierno</th>
<th>Otra persona (quién?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiero un préstamo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tengo nervios o estoy turbada.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alguien en mi casa tiene una enfermedad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Una deuda en mi casa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Me falta consejo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconvenientes o disputas en mi trabajo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Me preocupo sobre mi embarazo y mi bebe.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconvenientes o disputas en casa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Me falta dinero por la comida, la ropa, o mis gastos.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cultural Domain Analysis – Interview Schedule:

<table>
<thead>
<tr>
<th>Frase</th>
<th>Estoy muy en desacuerdo</th>
<th>No estoy de acuerdo</th>
<th>Estoy de acuerdo</th>
<th>Estoy muy de acuerdo</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. Es importante alimentarse bien durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2. Comer cosas ácidas, como mangos verdes, hace daño durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3. Está bien fumar durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4. Es mejor estar casado cuando está embarazada.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5. Es importante tomar vitaminas durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6. El bebé está afectado cuando la mamá no lo desea.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E7. Hace daño a la mujer embarazada drogarse.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E8. Las parteras ayudan a las mujeres embarazadas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E10. El estrés no afecta el embarazo y el bebé.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E11. Las cosas con una calidad de fría hacen daño durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E12. Es importante para la mujer embarazada a descansar.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E13. Un golpe al estomago le hace daño al embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E15. El sobado es buena para la mujer embarazada y el bebé.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E16. La seguridad económica es necesaria al tener un bebé.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E17. Cuando se preocupa durante el embarazo, le hace daño al bebé.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E18. No es importante tener buena salud física y hacer ejercicio durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E19. El bebé sale mal cuando la mamá pasa corajes durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E20. Le hace daño al bebé si la mamá toma alcohol durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E22. El apoyo de la familia es importante para la mujer embarazada.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E23. El bebé sale mal cuando la mamá tiene nervios durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E24. Un marido alcohólico es malo para la mujer embarazada.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E25. Es necesario checarse con un médico cada mes durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E27. No es importante dormir bien durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E28. Es necesario para la mujer embarazada estar tranquila.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E29. Está bien levantar cosas pesadas cuando está embarazada.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E30. Es importante a cuidar su temperatura en el cuerpo durante el embarazo.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Eventos de Crisis de la Vida (del año pasado)**
Las preguntas siguientes son personales y posiblemente emocionales. Por favor, las contestas con la verdad. La información queda con el estudio, y no pasa a otra persona o organización.

**LC1.**
- ¿El año pasado, murió alguna persona ligada a ti emocionalmente?  
  **SI / NO**
- ¿Quién? ____________________

**LC2.** ¿Hay una relación qué se terminó? (como esposo, amigo, familiar)  **SI / NO**

**LC3.** ¿Te han encarcelado a ti, a algún pariente, o una y otra persona cerca de ti emocionalmente?  **SI / NO**

**LC4.** ¿Ha sufrido tu, un pariente, o una persona cerca de ti emocionalmente una enfermedad o un daño?  **SI / NO**

**LC5.**
- ¿Ha sido echado de su trabajo: tu, un pariente, o una persona cerca de ti emocionalmente?  **SI / NO**
- ¿Ha terminado un trabajo?  **SI / NO**

**LC6.** ¿Ha sido cambio en la situación financiera de tu hogar?  **SI / NO**
- (Si) Por favor, me explicas: ________________________________

**LC7.** ¿Has tenido alguna alteración o problemas con tu familia?  **SI / NO**

**Dieta**
Ya, platicamos sobre los alimentos en general en tu dieta y lo que tomaste en las 24 horas antes.

*Para cada alimento, si no es sencillo, pregúntele que contiene el alimento/comida, y escribe todo que contiene***

**DT1.**
- ¿(en general) Tomas vitaminas prenatales?  **SI / NO**
- ¿Qué marca? ______________________________________
- ¿Con qué frecuencia? ________________________________

En las 24 horas pasadas:
**DT2.** ¿Qué desayunaste/comiste/cenaste (dependiente en que hora es en la vez de la entrevista)?
___________________________________________________
___________________________________________________
___________________________________________________

**DT3.** ¿Qué desayunaste/comiste/cenaste antes?
___________________________________________________
___________________________________________________
___________________________________________________
DT4. ¿Qué comiste entre las dos comidas?

____________________________________

________________________________________

______________________________________________________________________________

____________________________________________________________

DT5. ¿Qué desayunaste/comiste/cenaste antes?

____________________________________

________________________________________

______________________________________________________________________________

____________________________________________________________

DT6. ¿Qué comiste entre las dos comidas?

____________________________________

________________________________________

______________________________________________________________________________

____________________________________________________________

DT7. ¿Tomaste o comiste algo en la calle? SI / NO

____________________________________

________________________________________

______________________________________________________________________________

____________________________________________________________

DT8. ¿Mientras ves la televisión qué comes o bebes?

____________________________________

________________________________________

______________________________________________________________________________

____________________________________________________________

***Pregúnte las siguientes preguntas solamente si ella no los menciona en sus
respuestas***

(No mencione la palabra carne)

DT9. ¿Comiste en las 24 horas pasadas:
   a. carne de pollo SI / NO
   b. carne de res SI / NO
   c. carne de puerco SI / NO
   d. carne de chivo SI / NO
   e. pescado SI / NO
   f. mariscos SI / NO
   g. otra carne SI / NO ¿cuál? ________________________________

DT10. ¿Comiste frijoles? SI / NO leguminosas SI / NO

DT11. ¿Tomaste yogur? SI / NO, leche SI / NO, queso SI / NO

DT12. ¿Comiste huevos? SI / NO

DT13. ¿Comiste tortilla? SI / NO
   ¿Qué marca de tortilla? ________________________________
¿Comiste tostadas? SI / NO

DT14. ¿Comiste pan? SI / NO

DT15. ¿Comiste dulces? SI / NO Chatarra SI / NO ¿Cuál?

DT16. ¿Comiste arroz? SI / NO Otra cereal SI / NO ¿Cuál?________________________

DT17. ¿Tomaste jugo? SI / NO ¿Preparado o fresco?

¿Con que frecuencia has comiendo eso durante su embarazo?:

CCF1. carne de pollo
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF2. carne de res
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF3. carne de puerco
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF4. pescado
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF5. soya
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF6. comidas ácidas
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF7. cosas heladas
   a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF8. huevos
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF9. fruta
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF10. verdura
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF11. arroz
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca
CCF12. avena
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca

CCF13. frijoles
diario/2-3 veces a la semana/a la semana/2-3 veces al mes/al mes/casi nunca/nunca

*Abuso Sustancio*

SA1. a. ¿Cuándo tomaste medicamentos por última vez? ________________________
    b. ¿Qué medicamento? ______________________________________________
    c. ¿Has tomado medicamentos durante el embarazo? SI / NO
    d. ¿Qué medicamento? ______________________________________________

SA2. ¿Cuántas tazas de café tomas cada día? ______________________________

SA3. ¿Cuántas tazas de té caliente tomas cada día? _________________________
    Te negro / Te verde / Te de hierbas

SA4. ¿Cuántos refrescos tomas cada día? _________________________________
    ¿Qué marcas? _________________________________________________

**Algunas de las siguientes preguntas quizás te resulten son delicadas, recuerdas que tus respuestas sinceras son una gran ayuda al estudio.***

SA5. a. ¿Cuándo fumaste por última vez? _________________________________
    b. ¿Con qué frecuencia fumaste en el año pasado?
    Diario/ 2-3 veces a la semana / Un vez a la semana / 2-3 veces al mes / Mensualidad / 2-3 veces al año / Nunca
    c. ¿Desde el embarazo, has fumado? SI / NO
    d. ¿Con qué frecuencia?
    Diario/ 2-3 veces a la semana / Un vez a la semana / 2-3 veces al mes / Mensualidad / 2-3 veces al año / Nunca

SA6. a. ¿Cuándo tomaste alcohol por última vez? _____________________________
    b. ¿Con qué frecuencia tomaste en el año pasado?
    Diario/ 2-3 veces a la semana / Un vez a la semana / 2-3 veces al mes / Mensualidad / 2-3 veces al año / Nunca
    c. ¿Desde el embarazo, has tomado? SI / NO
    d. ¿Con qué frecuencia?
SA7. a. ¿Con qué frecuencia toma alcohol tu pareja?

Diario/ 2-3 veces a la semana / Un vez a la semana / 2-3 veces al mes / Mensualidad / 2-3 veces al año / Nunca

b. ¿Tu pareja es alcohólico? SI / NO

SD27. Por favor, cuál es el ingreso de su hogar al 15 días?

$0-$1500 / $1550 -$3000 / $3050 - $5000 / más que $5050

Consonancia Cultural (que no está incluida en las otras partes)

Ya, estamos casi terminado. Las últimas cuestiones son sobre tu experiencia durante este embarazo.

CC1. ¿En tu opinión, tienes la seguridad económica necesaria para tener un bebe?

SI / NO

CC2. ¿Con qué frecuencia descansas al día?

5 veces al día / 3 veces al día / 2 veces al día/ 1 veces al día / ninguna vez

CC3. ¿Estás tranquila? Siempre / Casi siempre / A veces / casi nunca / nunca

CC4. a. ¿A qué temperatura debes mantener tu cuerpo cuando estás embarazada?

Calientito / tibio / Frío

b. ¿Te preocupa mantener tu cuerpo a una temperatura adecuada?

Siempre / Casi siempre / A veces / Casi nunca / nunca

CC5. ¿Duermes bien? Siempre / Casi siempre / A veces / Casi nunca / Nunca

CC6. ¿Con qué frecuencia levantas cosas pesadas?

Muy seguido / Seguido / A veces / Casi nunca / Nunca

CC7. a. ¿Con qué frecuencia pasas corajes?

Muy seguido / Seguido / A veces / casi nunca / nunca

b. ¿Has pasado un coraje fuerte en el embarazo? SI / NO
c. ¿Te preocupa que le haya hecho daño al bebe? SI / NO
d. ¿Te preocupa que el bebé sea corajudo por lo que pasó?  

**SI / NO**

CC8. ¿En tu opinión, tienes el apoyo de tu pareja en el embarazo?

**Siempre / casi siempre / a veces / casi nunca / nunca**

CC9. a. ¿Con qué frecuencia pasas sustos?

**Muy seguido / Seguido / A veces / casi nunca / nunca**

b. ¿Has pasado un susto fuerte en el embarazo?  

**SI / NO**

c. ¿Te preocupa que le haya hecho daño al bebé?  

**SI / NO**

d. ¿Te preocupa que el bebé vaya a ser nervioso por lo que pasó?  

**SI / NO**

CC10. a. ¿Has recibido algún golpe durante tu embarazo?  

**SI / NO**

b. ¿Te preocupa que el golpe le haya hecho daño al bebé?  

**SI / NO**

**Síntomas:**
Temperatura: ________________

**En la semana pasada y hoy:**
¿Tuviste síntomas:

de un gripe?  

**SI / NO**

dolor de cabeza?  

**SI / NO**

dolor de gargantua?  

**SI / NO**

dolor de cuerpo?  

**SI / NO**
tos?  

**SI / NO**
temperatura o fiebre?  

**SI / NO**
diarréa?  

**SI / NO**
estomudando?  

**SI / NO**
nariz mocosa?  

**SI / NO**
dolor de estómago o panza?  

**SI / NO**
nausea?  

**SI / NO**
vomitiando?  

**SI / NO**
dolor de oreja?  

**SI / NO**
vista nublada?  

**SI / NO**
problemas de respiración?  

**SI / NO**

¿Estuviste muy cansado?  

**SI / NO**
mareo o borracho?  

**SI / NO**

****Recuerda, darles detalles****

**Para la Investigadora**
Hora de terminación: ___________  Duración de la entrevista: ___________
Ubicación en lugar: ______________________________________________________
Piensas que la participante contestó con honestidad a todas las preguntas? _________
Si no, cuál preguntas tienen problemas y explica. _______________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
Otros comentarios de la investigadora:
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
