Cancer Patients and Anxiety in the Pre-Surgical Ambulatory Setting

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DNP PROJECT PROPOSAL

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Abstract

Introduction / Purpose:

This primary research is aimed at identifying and scoring pre-procedural anxiety in cancer patients that undergo outpatient port placement. Identification of signs and symptoms of heightened levels of anxiety is common in the surgical setting. Determining a baseline level of anxiety in cancer patients can guide future studies and aid in determining proper protocols to plan for and treat anxiety in the outpatient setting. Hopefully, the future will consist of a routine anxiety score upon diagnosis and treatment options can be discussed early in the disease progress.

Methods:

Evaluation of anxiety levels will be assessed using the General Anxiety Disorder scale (GAD 7) as it is the most frequently used assessment tool for measuring anxiety levels in patients (Jordan, Shedden-Mora, & Löwe, 2017). The patients will be asked to self-score their anxiety levels upon arrival at the out-patient center on the morning of their port placement. The self-scoring assessment will provide useful data information to assist and guide the anesthesia clinician to properly evaluate and treat anxiety both pre-procedurally and intra-operatively. The anesthesia model selected for this evaluation will be limited to monitored anesthesia care (MAC)/ conscious sedation cases in the outpatient setting.

Results:

Results after project completion revealed that 31.25% of participants scored ten or greater on the GAD 7 assessment tool used in pre-operative holding. Eleven males and twenty-one females participated in the study (N=32). A score of 10 or greater is considered significant and that anxiety is present (Jordan et al., 2017).

The average age of the participants was 63 with a standard deviation of 11.9. The participants average weight in kilograms was 77.03. The anesthesia time in minutes from in the operating room until recovery hand-off in the post anesthesia care unit (PACU) averaged 57.19 minutes. Intravenous fentanyl average dose was 106.25 mcg and midazolam averaged 4.17 mg per participant. Of the participants that scored greater than 10 on the GAD 7 tool, 50% were males. Thusly, male cancer patients experienced heightened anxiety at a greater level of 45.4% whereas the female participants only reported heightened anxiety 23.8% of the time. The most prevalent cancer diagnosis in the convenience sample was lung cancer at a rate of 21.8%.

Discussion:

Surgery in an outpatient setting is quite common, it is also routine to be nervous or anxious on the day of the procedure. Generalized anxiety is a disorder that interferes with daily functioning and those that experience this phenomenon are overly concerned about routine matters such as health, finances, death, work related problems and inter-personal relationships. Symptoms can include excessive worry, intestinal issues, insomnia, irritability, exhaustion, trembling, muscle tension and aches, and can sometimes lead to more serious additional psychiatric issues (Mayo Clinic, 2018).

Based on the findings of the study this investigator recommends follow-up studies regarding anxiety recognition in patients diagnosed with cancer, and that early intervention and treatment options be discussed with patients and their caregivers. Future studies should aim at prevention of generalized anxiety disorders by treating anxiety with the initial diagnosis of cancer.

Further studies should be aimed at prevention of anxiety in males that are facing cancer. This study finds that men experience anxiety at a much greater level than female patients and a larger study should be completed to confirm this finding. Additional studies should aim at treatment options and then after treatment do a repeat evaluation of anxiety levels with a proper scoring tool to evaluate and compare treatment modalities within this patient population .

Expanding on existing studies should include males with anxiety when facing a cancer diagnosis, as well as statistical data on the quantitative data available for those that are being treated. Studies should be completed evaluating the use of anxiety evaluations for patients newly diagnosed with cancer and explore what treatment modalities provide the most appropriate relief for this patient population. Overall, further research should be done to expand on generalized anxiety disorders for cancer patients and anxiety evaluations should be considered as part of the full physical assessment for these patients.

A gap in care exists between patient diagnosis of cancer and port placement for chemotherapy. Additional studies can be compiled to compare port placement surgery with tumor reduction or any surgery a cancer patient may face. Because cancer patients are diagnosed by routine findings on exam with their primary care physician, the referral process can be

overwhelming and rapid causing the diagnosis of anxiety to be of little importance. At times, this referral process to oncology, radiation, or surgery is rapid and necessary for proper treatment and best outcomes causes the patient to experience a myriad of emotional challenges. Anxiety is a commonly undiagnosed problem. Because nearly one-third of participants in this study reported significant anxiety, physicians should include an anxiety assessment as part of the clinical plan for cancer patients undergoing treatment. Proper recognition and consideration of anxiety issues will lead to better patient care and planning and provide a more wholistic plan of care for this patient population and the unique set of circumstances in which they find themselves.

Keywords: Anxiety, peri-operative, cancer, port placement, Gad 7, MAC sedation

Cancer Patients and Anxiety in the Pre-Surgical Ambulatory Setting

Introduction

Patients diagnosed with cancer can experience an elevated level of anxiety as compared to the healthy population. Psychiatric illnesses such as depression and anxiety are common, but often neglected complications of cancer that have an adverse effect on quality of life, adherence to treatment, survivability, and treatment costs. Depression affects up to 20%, while anxiety is experienced in 10% of patients diagnosed with cancer compared to past year prevalence figures of 5% and 7% respectively (Pitman, Suleman, Hyde, & Hodgkiss, 2018). Patients scheduled for acute treatment and needing port-a-cath placement prior to starting chemotherapy are scheduled for outpatient surgery and routinely arrive at our facility anxious, scared, and in some type of recovery from a very recent tumor resection, hysterectomy, colorectal surgery, or similar

procedure. Treatments for depression and anxiety in cancer patients are under-recognized and under treated. Awareness among physicians and the need to address presurgical anxiety can be improved upon as numerous treatment options exist.

Background

Preoperative anxiety can evoke various physiological and psychological adverse effects, and this can lead to postoperative complications. Patients experience higher rates of adverse events when preoperative anxiety exists, these complications include post-op nausea and vomiting (PONV), unplanned overnight admission, and urgent care visits within 30 days (Majumdar, Jennifer Ross, Vertosick, Cohen, Assel, Levine, & Barton-Burke, 2019a). Numerous studies exist and demonstrate that heightened anxiety also leads to increased anesthesia requirements and that this can potentially lead to further issues in the post-operative period. Increased anesthesia requirements can lead to longer length of stay in the post anesthesia care unit, post-operative nausea and vomiting (PONV), lack of coordination and mentation deficits, and overall dissatisfaction with the surgical experience. It is important to understand that anxiety can be evaluated and treated prior to any surgical procedure.

Problem Statement

Diverse types of cancer surgeries are performed on an outpatient basis in the U.S. and require no hospital admission. As this number of surgeries increases, there is even less time for health-care providers to support anxiety of the peri-operative cancer patient; therefore a gap is left in our perceptions of the problem and the overall impact of this anxiety during this critical perioperative time (Majumdar, Jennifer Ross et al., 2019a).

Numerous treatment modalities exist for anxiety including hypnosis, relaxation techniques, benzodiazepines, counseling, and herbal remedies. With proper identification of pre-procedural anxiety and treatment, the surgical experience can be optimized and improve surgical satisfaction. Appropriately recognized and treated anxiety can benefit the cancer patient by reducing the occurrence of post-operative nausea and vomiting (PONV) while also minimizing narcotic requirements. Properly managed anxiety can reduce occurrence rates of PONV as well as lessen intra operative anesthetic requirements. Any improvements in anxiety can shorten recovery time in the post anesthesia care unit (PACU) and allow for a more pleasant patient experience for individuals battling cancer.

Gap Analysis

Anxiety levels are always high when a person has a surgical appointment, but cancer related surgeries present a unique set of challenges. Routinely, patients are concerned with changes or scars on their body, some are worried about sexuality issues after a cancer diagnosis, while others are more concerned with healing and being able to take care of their families or themselves. Nevertheless, some cancer patients rarely receive extra care or consideration because it seems breast cancer is the focus that the population see on the news and in the media and without that diagnosis there are limited resources. Worth mentioning is that gynecological cancer patients experience greater levels of anxiety and frequently report they have unmet needs in the medical setting (Faller et al., 2017).

Implementing a strategy to reduce anxiety in the surgical setting for all cancer patients will deliver a level of compassion and understanding that goes far beyond taking a simple pill. I

surmise that having a patient that is relaxed, calm, not crying, and one that demonstrates a willingness to take part in self-care will improve the entire surgical process for these outpatient procedures. It is my hope that if significant positive changes occur in this population and that we can promote a routine process for identification of anxiety in cancer patients as well as any surgical candidate in the future.

It is easy to note after a quick review of the literature that a gap exists between identification of a cancer, referral to the appropriate doctor or surgeon, and implementation of a treatment plan. The process can move so quickly, that any anxiety the patient may be experiencing is left out of the diagnosis protocol. Medical professionals must educate themselves that this gap in diagnosis of anxiety can be improved upon. Our outpatient surgical facility is an appropriate site for evaluation of anxiety in cancer patients seeking port placement. The anxiety level these patients present with are under diagnosed and unmanaged. It is appropriate that treatment protocols are implemented in the future. The first step in developing a treatment protocol is formal recognition of the existing problem. Recognition of anxiety should be a routine part of the assessment process for all surgical candidates.

Review of the Literature

A review of the literature was conducted using various databases such as CINAHL, PubMed, and Cochrane. Articles greater than five years old were excluded except when necessary for historical content, articles using animal subjects were excluded. Key Terms used for the search included, cancer, anxiety, melatonin, outpatient surgery, anxiety measurement tools, and generalized anxiety disorder.

A search in relevant databases was performed using the above descriptors related to anxiety and patients scheduled for outpatient surgery with a diagnosis of cancer. Articles were screened by title, abstract, full text, and date of publication. One hundred twenty-eight articles were initially identified, but only thirty-six were screened for use in this project. Of the thirty-six, data was extracted from 15 articles and are compiled within this proposal. Articles compiling data using animals as subjects were deleted from the review. Types of articles used for this proposal include meta-analysis materials, retrospective cohort studies, clinical studies, randomized trials, and clinical practice guidelines.

Of great concern during the review of literature was that I found a disproportionate amount of data concerning all aspects of breast cancer, including research and design and surgical procedures and treatments, as well as cognitive issues these patients face, but less for other types of cancers. Several articles reviewed mentioned disparities in research or funding and even mention breast cancer as dominant amongst research and funding.

Poor recognition of anxiety is associated with reduced quality of life and can have a negative effect on survival rates(Pitman et al., 2018). Pre-operative anxiety is experienced on average 16.7% of the time in patients that are diagnosed with cancer and these patient face a significant risk of higher rates of adverse outcomes including PONV, unplanned overnight admission, and urgent care visits within 30 days of discharge (Majumdar, Jennifer Ross, Vertosick, Cohen, Assel, Levine, & Barton-Burke, 2019b).

Anxiety can cause a disruption and become detrimental to quality of life for cancer patients. Cancer patients that experience anxiety may experience impaired social functioning,

fatigue, physical impairment and sometimes depression. Anxiety tends to increase as cancer illness progresses, so the more extensive the disease, the greater the amount of anxiety. Involvement of a mental health professional is not always a useful option for anxious cancer patients as many are not willing to accept referral for treatment (Majumdar, Jennifer Ross et al., 2019b).

A cross sectional study evaluating anxiety levels of surgical anxiety and anesthesia anxiety levels with 3200 patients revealed that pre-operative anxiety is common and the anesthesia for surgery presents another anxiety outlet for patients. Findings in this study suggest that surgical anxiety and anesthetic anxiety should be addressed separately but the surgical anxiety was scored higher than anesthesia anxiety (Aust et al., 2018). While anxiety does plague the surgical cancer patient, there are similar findings amongst all patient types. It is notable that of the articles reviewed generally females report greater anxiety than males regardless of diagnosis and age, and that patients having general anesthesia have more anxiety than those with regional anesthesia (Celik & Edipoglu, 2018).

The literature is clear on the findings of anxiety in the peri-operative timeframe, but treatment modalities are mixed. Currently nurses are often the primary members of the health care team tasked with assessing for anxiety. Implementing proper interventions and care plans to improve the patients' psychosocial well-being begins with an assessment by the receiving nurse (Majumdar, Jennifer et al., 2019).

Various assessment tools are available for evaluation of anxiety in individuals in the clinical setting. For this study, the Generalized Anxiety Depression Score (GAD 7) tool will be

implemented. The GAD 7 is a self-scored questionnaire that can be completed in approximately five minutes the morning of surgery. The GAD 7 is a useful tool for determining anxiety and was developed in 2006. The GAD 7 has proven to be a reliable and valid assessment tool for clinicians and patients (Jordan et al., 2017).

It is possible that anxiety could be addressed by the anesthesia provider, but unfortunately this meeting takes place on the day of surgery. If the facility can access the patient prior to their scheduled procedure than certain patients could be treated and the patient could be referred for anxiety evaluation and treatment, but with acute cancers and those needing immediate chemotherapy and port placement, there is no timeframe for such an assessment.

Many times, the speed with which a physician moves their patients along the surgical pathway from diagnosis to chemotherapy can progress very quickly. It is with these patients that anxiety evaluations are not part of the treatment modality; and the result is a gap in care that develops in diagnosis and treatment plans. For patients to have the best outcome, an anesthesia assessment should be done days to weeks prior to scheduling, but this does not happen often. In fact, enhanced recovery after surgery (ERAS) guidelines suggest early detection and referral for anxiety to benefit from newer forms of anesthetics such as non-narcotic multi-modal analgesia (Stamenkovic et al., 2018). If time were not a factor, these anxious cancer patients would benefit from early recognition of anxiety and perhaps be able to lock in on improved wholistic patient care.

Overall, the review of literature clearly describes a disparity in cancer diagnosis and recognition of anxiety. A wide range of treatment options exist, but patients must participate and

be able to express their anxiety with their physicians. Rushing from diagnosis to surgery can complicate matters, which in this case, leaves the diagnosis of anxiety obvious to the anesthetic provider but untreated prior to surgery.

I propose to research the use of a quality screening tool as a routine part of patient assessment in the clinical setting. I suggest that addressing the heightened anxiety these patients express will decrease the anesthetic dosages, increase cognition, shorten the length of stay at the facility, promote improvement in PONV and ambulation, decrease nursing bed-side time, and provide a more satisfactory experience for this vulnerable population.

Evidence-based Practice: Verification of Chosen Option

Based on the review of literature and evidence-based protocols assessment of anxiety will best be determined using the GAD 7 assessment tool. I propose to score thirty-two surgical patients that have a cancer diagnosis. Scores will be recorded to determine if anxiety is a common phenomenon in this patient population. Using a PICOT framework, the study in question exists in the following manner: Is there a positive score of anxiety or depression using the GAD7 assessment tool in patients with cancer that present for port placement in the outpatient setting?

Theoretical Framework or Evidence-based Practice Model

It is appropriate to treat pre-surgical anxiety if a diagnosis exists. Recognition of this phenomenon by the medical provider should be addressed. Theoretically, the nurse should be able to assess, but it seems the patient would be in a better position if the anxiety were addressed at diagnosis by the physician. Rushing a patient from cancer diagnosis to surgery promotes the

plan of care but can cause a gap in recognition of additional symptoms such as anxiety. Nursing theorists have studied comfort and suffering for years, and this foundational framework is what sets nursing apart from the approach to medical care by a physician. Nursing should be a foundational approach for anxiety assessment in the clinical setting.

Kolcaba's approach to comfort addresses many aspects of care that are directly related to the patient's needs in the surgical setting (Seyedfatemi, Rafii, Rezaei, & Kolcaba, 2014). Kolcaba addresses three types of comfort such as relief, ease, and transcendence and puts them each in context in the four domains of physical, psychospiritual, environmental, and sociocultural (Wilson & Kolcaba, 2004). Each component of this theory is essential to providing clinically sound intervention as well as spiritual and emotional support to the patient and the patient's family members. Using Kolcaba's comfort theory should always be incorporated in the care of the patient. Afterall, it is a nurse's main goal to provide comfort no matter what manner of delivery. Comfort is not always a medication, sometimes it is as basic as a verbal recognition to a patient that is suffering. All creatures, human and animal, require comfort and care to progress. As nurses, it is our job to ensure that we provide comfort to our patients and incorporate best practices in our application of interventions. Kolcaba's Comfort Theory diagram for this scholarly project is attached (Appendix A).

Goals, Objectives, and Expected Outcomes

The goal of this scholarly project is to establish a baseline assessment that anxiety levels are heightened in the peri-operative setting. This descriptive data will then point to patients' needs that should be recognized and addressed. Patients that are assessed properly can be

clinically optimized in the surgical setting and be prepared for surgical procedures in a timely and appropriate manner. It is determined that patients with anxiety, if treated properly prior to surgery have better outcomes, less complications, require smaller doses of anesthetic medications when compared to patients that are not medicated, additionally these patients should report a satisfactory experience in our surgical facility.

Anxiety scores will be collected on the day of surgery and analyzed to evaluate the baseline prevalence of the diagnosis in the outpatient population. The collected data will be analyzed and referred for future work should a positive conclusion be made.

Methods

Our change implementation process will begin upon patient arrival to our surgical facility. The benefits of a successful evaluation will include the potential for efficient and early recognition of anxiety. Additionally, early recognition of anxiety symptoms can allow for appropriate interventions from the medical staff which include the anesthesia department clinicians. Recognition and treatment of anxiety leads to better patient satisfaction, cost savings associated with intra-op pharmaceuticals, less time with bedside nursing care, family member anxiety levels decreased, and a more pleasurable interaction between all staff and patient care givers.

I will be selecting a convenience sample of thirty-two cancer patients that present to our facility for port placement and chose to consent to the anxiety assessment. These patients will be self-scoring their anxiety levels using the GAD7 assessment tool (Appendix B) prior to their anesthetic evaluation. No other interventions will occur. The data will be collected and analyzed

for positive anxiety scores. A score greater than four on the assessment tool confirms the diagnosis of anxiety. Comparisons will be made of anxiety variants such as age, gender, and physical status. Physical status will be determined using the classification system set forth by the American Society of Anesthesiologists and will be rated from (I) normal and healthy adult to (V) which is moribund and not expected to survive (Abouleish, Leib, & Cohen, 2015).

The data collected will be analyzed using SPSS software and descriptive statistics will be gathered. The data will be stored in UA Box in which data is password protected and encrypted. Only the investigator and the statistics advisor will have access to the data.

Project Design

This will be an evaluation of anxiety using a self-scored survey prior to surgery. The need to address patient anxiety is timely and should take no more than 4 minutes to complete.

Project Site and Population and Barriers

The study will take place at an out-patient office based vascular surgical center in Chattanooga, TN. Chattanooga is a moderately large city that houses several large hospitals including Level 1,2,and 3 facilities. This outpatient center is extremely accessible for patients, the parking is free, and it is centrally located in the middle of three largest hospitals in our community. Ease of access and location is a predominant feature of our facility.

The necessary resources for the project include the availability of the assessment tool and the ability of the patient to participate. The GAD7 anxiety screening score guide is attached in the appendix for review. The patients selected will be adults, with a cancer diagnosis that are

referred for immediate port placement prior to chemotherapy infusion treatments. The providers in the facility include surgeons, registered nurses, and anesthesia providers and their staff members. The director of clinical research has approved the study. It is difficult to predict how many referrals our facility will have over a six-month period, so I have settled on sample size of no more than thirty-two patients. This number could be decreased if patient referrals are less than anticipated.

Key staff members and surgeons have been identified and small meetings have occurred to discuss the proposed study. Our surgical facility is organized in the usual manner of pre and post-op surgical areas with appropriate nurse to patient ratios. This outpatient vascular facility offers a wide variety of services, including endovascular interventions, basic dialysis access procedures, a variety of colo-rectal procedures, and varying types of procedures for venous-occlusive disease in addition to port placement.

One notable barrier that could interfere with data collection are time constraints. If a patient arrives late to the facility, it is possible that the anxiety assessment screening could be missed or left out. It will be important that the patients arrive on time at our facility for them to take part in the study. This is something that cannot be controlled, but we will try to emphasize to the patient when they are called prior to their appointment to arrive on time at the facility.

Measurement Instruments

To measure the outcomes of this project the following instruments will be used: GAD 7 Assessment Questionnaire (Appendix B) which has reliability studies proving it to be accurate and precise, the intra-op anesthesia record, the post-operative vital signs and discharge data

including time and length of stay. The General Anxiety Disorder scale (GAD 7) tool is the most frequently used assessment tool for measuring anxiety levels in patients and provides internal reliability (92%) and validity useful for this setting (Jordan et al., 2017). The GAD 7 tool was developed in 2006 and there are no special considerations or permissions needed to use this tool.

Data Collection Procedure

Implementation of this project will commence immediately upon IRB approval (Appendix C). All patients with a cancer diagnosis and scheduled for port placement at our facility will be considered for the study. Informed consent will be obtained on the day of surgery by the nurse that prepares them for surgery. The first thirty-two patients will only be self-scoring their anxiety using the GAD 7 assessment tool. No interventions will be done.

Data Analysis

All qualitative data will be collected and analyzed in a comparative manner using descriptive statistics and demographic data, as necessary. Graphs will be developed to correlate the acquired data and comparisons using graph-pad or SPSS software. Gender will be provided, and data will be separated based on this variable as it can guide future studies if a correlation exists. The type of cancer will be noted but outcomes will not be compared based on the type of cancer. Descriptive statistics such as age, weight, and gender will be compiled. Anxiety scores will be analyzed as aggregate data to determine the level of severity based on the GAD 7 scores.

Cost-Benefit Analysis

Anticipation of costs associated with this study include the cost of the printing the GAD 7 tool. I expect this to cost less than $25. The time associated with participation in this study will yield approximately five additional minutes of nursing time and patient stay.

Timeline

Once proposal approval is obtained and IRB is complete, I expect to have a target date of completion for data collection within six months. It is difficult to predict the number of cancer patients we will have at our facility so this period could be extended or shortened. I expect data analysis and interpretation to take 60 days, with dissemination of findings within 30 days of the data analysis.

Ethical Considerations/ Protection of Human Subjects

The University of Alabama (UA) Institutional Review Board (IRB) approval will be obtained prior to initiating the project. All participants in the study will be notified and informed consent will be obtained. All routine standards of care for outpatient surgery at our facility will be followed and all medical information obtained will be maintained within the facility. All HIPAA guidelines will be followed in the normal manner as for any surgical patient. All patients will be assessed for Covid-19 prior to surgery and each participant will be informed that the facility meets all Covid-19 requirements for operation as determined by the CDC. All patient records will remain on premises and all electronic data obtained will be on the UA box. All personal patient data such as name and address will be de-identified. All hard copies of files

within the facility only remain on premises for 24-48 hours before being scanned into an electronic file and stored within the confidential patient file server within the facility.

The risks associated with participating in this project is no different than the risks of patients receiving standard surgical outpatient care. Participation in the survey will not cause any physical risk. The only risk associated with the survey would be the leak of patient information. All precautions will be taken to minimize risk of privacy and confidentiality violations. Participant confidentiality will be assured by coding the participants using unique identification numbers. The list of participants and their identifying numbers will be kept in locked filing cabinets in the private offices in the practice. Only the principal investigator has access to the identifying patient information. All electronic files will be stored on a secure HIPPA UA Box which is cloud based.

Conclusion

The global aim of this project is to identify the level of anxiety of patients with cancer that are facing a brief surgical procedure in the outpatient setting at our facility in Chattanooga, TN. Anxiety levels are always high when a person has a surgical appointment, but surgery related to a cancer diagnosis is especially difficult. Cancer patients present a unique set of challenges. Many patients, and particularly women, are concerned with changes or scars on their body, some are worried about sexuality issues after a cancer diagnosis, while others are more concerned with healing and being able to take care of their families. Nevertheless, certain cancer patients rarely receive extra care or consideration because it seems breast cancer is the focus that the population see on the news and in the media. In fact, gynecological cancer patients

experience greater levels of anxiety and frequently report they have unmet needs in the medical setting (Faller et al., 2017).

Implementing a strategy to recognize anxiety in the surgical setting for all cancer patients would help to design future changes in medical treatment pre-procedurally. Recognizing anxiety early allows clinicians to deliver a level of compassion and understanding that goes far beyond taking a simple pill. I surmise that having a patient that is relaxed, calm, not crying, and one that demonstrates a willingness to take part in self-care will improve the entire surgical process for these outpatient procedures. It is my hope that if significant positive changes occur in this population that we can promote an anxiety screening process for all patients in the surgical setting.

The benefits of a proven correlation of anxiety, cancer, and surgery can be used to promote change in the surgical setting. Changes that address anxiety can lead to better patient satisfaction, cost savings associated with intra-op pharmaceuticals, less time with bedside nursing care, family member anxiety levels decreased, and a more pleasurable interaction between all staff and patient care givers.

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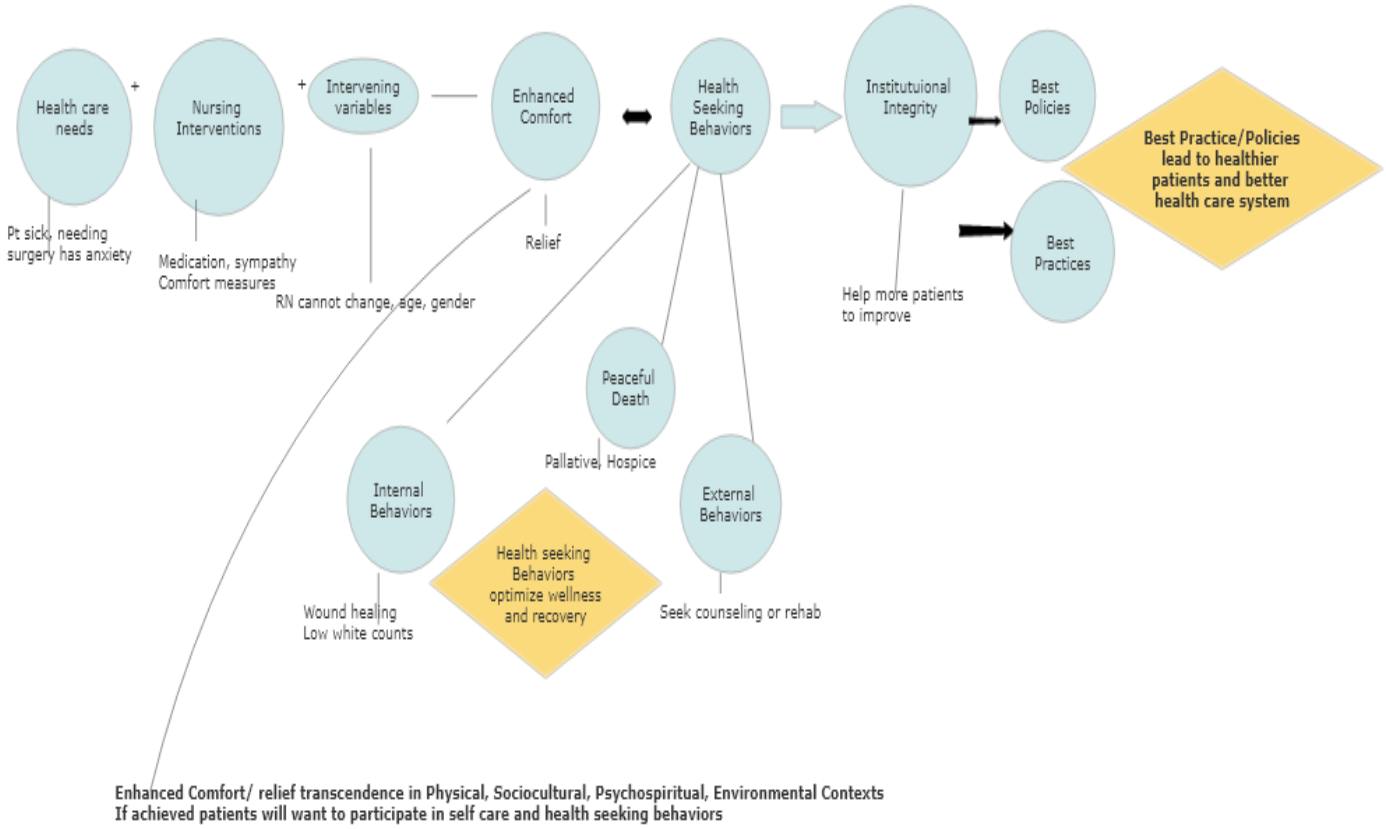
Appendix A

Kolcaba Comfort Theory - Anxiety and Port Placement



Appendix B

GAD-7

Over the last 2 weeks, how often have you been bothered by the following problems? *(Use "✔" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

(For office coding: Total Score T____ = ____ + ____ + ____)

Appendix C

IRB Approval Letter

THE UNIVERSITY O F

ALABAMA

DNP Program
Capstone College of Nursing
The University of Alabama Box 870358

Research &
Economic Development

Office for Research Compliance

April 1, 2021

Susan Scruggs, MSN

Re: IRB # 21-03-4448 "Evaluation of Cancer Patients for Level of Anxiety in the Preoperative Ambulatory Setting"

Dear Ms. Scruggs:

The University of Alabama Institutional Review Board has granted approval for your proposed research. Your application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 5 and 7 as outlined below:

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected, solely for non-research purposes (such as medical treatment or diagnosis).

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies,

The approval for your application will lapse on March 31, 2022. If your research will continue beyond this date, please submit a continuing review to the IRB as required by University policy before the lapse. Please note, any modifications made in research design, methodology, or procedures must be submitted to and approved by the IRB before implementation. Please submit a final report form when the study is complete.

Please use reproductions of the IRB approved informed consent form to obtain consent from your participants.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM, CIP
Director & Research Compliance Officer

Bessup Building | Box 870127| Tuscaloosa, AL 35487-0127 | 205-348-8461
Fax 205-348-7789| Toll Free 1-877-820-3066 | rscompliance@research.ua.edu

Appendix D

DATA ANALYSIS

Results after project completion revealed that 31.25% of participants scored ten or greater on the GAD 7 assessment tool used in pre-operative holding.

Eleven males and twenty-one females participated in the study (N=32). A score of 10 or greater is considered significant and that anxiety is present (Jordan et al., 2017).

The average age of the participants was 63 with a standard deviation of 11.9.

The participants average weight in kilograms was 77.03.

The anesthesia time in minutes from in the operating room until recovery hand-off in the post anesthesia care unit (PACU) averaged 57.19 minutes.

Intravenous fentanyl average dose was 106.25 mcg and midazolam averaged 4.17 mg per participant.

Participants that scored greater than 10 on the GAD 7 tool, 50% were males.

Male cancer patients experienced heightened anxiety at a greater level of 45.4% whereas the female participants only reported heightened anxiety 23.8% of the time.

The most prevalent cancer diagnosis in the convenience sample was lung cancer at a rate of 21.8%.