

**Problem-Solving Dimensions among Caregivers of People with Cancer
Receiving Outpatient Palliative Care**

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Abstract

Family caregivers of people with cancer encounter a wide range of problems including challenges managing patients' symptoms, difficulties navigating complex healthcare systems, and financial stressors associated with caregiving. Outpatient palliative care teams are ideally positioned to help caregivers respond to these challenges; however, little evidence is available to inform problem-solving support for caregivers in this setting. This article presents results from a secondary analysis of data obtained as part of a randomized clinical trial of a problem-solving intervention for family caregivers of people with cancer receiving outpatient palliative care. It describes the extent to which caregivers report adoption of positive and negative problem orientations and use of rational, impulsive, and avoidant problem-solving styles, and examines whether these problem-solving dimensions differ by age and gender. Results reveal statistically significant negative correlations between caregiver age and positive and negative problem orientations and use of a rational problem-solving style, and statistically significant gender differences regarding negative problem orientation and use of an impulsive problem-solving style. Findings from this exploratory study highlight unique potential strengths and needs of caregivers and set the stage for future research on problem-solving among cancer caregivers in the growing field of outpatient palliative care.

Keywords: cancer, caregivers, palliative care, problem solving, social work

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Introduction

Approximately 16.9 million people with a history of cancer were living in the United States in January 2019 (American Cancer Society [ACS], 2019). This number includes individuals across the continuum of the diagnoses, from newly diagnosed to long-term survivorship, and is expected to grow to over 22.1 million people by January 2030. Family members and friends often figure prominently in the care of people with cancer (PwC). An estimated 1.1 million to 6.1 million Americans provide unpaid care to a family member or friend with cancer. Approximately 65 percent of these caregivers (who are often referred to as “family caregivers” regardless of their legal or biological relationship with their care recipient) are women. Sixty-six percent are spouses of the person with cancer, and adult children comprise approximately 18 percent of cancer caregivers in the U.S. These caregivers provide an average of 8 hours of care per day for PwC, even a year or more after diagnosis. Changes within our healthcare system have led to care most often being provided in the home rather than in a hospital setting, greatly increasing the burden on family caregivers. This burden may lead to a deterioration in both physical and mental quality of life (ACS, 2019).

Problems Experienced by Cancer Caregivers

When compared to caregivers of people with other chronic illnesses, caregivers of PwC face unique circumstances. The nature of cancer as a progressive disease and one that can include a short trajectory towards death means that a caregiver’s duties can change both quickly and dramatically. Cancer itself and the treatments for the disease can cause multiple symptoms such as pain and fatigue that must be managed by caregivers who frequently receive insufficient training and assistance from medical professionals (Jadalla et al., 2020). The time and effort required to care for PwC often leads caregivers to neglect their own needs or the needs of their

families. Caregivers often bear a financial cost of caring for PwC through time lost from taking time away from their jobs and other associated costs of care. They may also experience an increase in physiologic changes and medical illness due to the physical stresses of being a caregiver. Compared to caregivers of individuals with other chronic illnesses, cancer caregivers are more likely to experience heart disease, hypertension, and impaired immune function. In addition, the emotional toll of caregiving can lead to anger, anxiety, and depression, with many caregivers eventually being treated at some point for psychiatric problems or impaired cognitive function (Blum & Sherman, 2010).

Integrated Palliative Care for Cancer Caregivers

The integration of outpatient palliative care along with standard oncology care, especially soon after diagnosis, has been shown to improve the health and well-being of both PwC and their family caregivers (Davis et al., 2015). However, despite research showing that outpatient palliative care helps family caregivers address caregiving needs, little research exists as to the specific nature of the needs. Benson et al. (2021) conducted a secondary analysis of data provided by caregivers who took part in a cancer caregiver support intervention in an effort to determine more specifically what challenges these caregivers face most often, as well as which ones they feel are the most troublesome. Problems with pain and symptom management, financial concerns, caregiver distress, needing extra caregiving help, and problems communicating with the PwC were among the most commonly cited and most reportedly stressful problems identified by caregivers participating in the study (Benson et al., 2021).

Theoretical Framework

The Social Problem-Solving Model (D’Zurilla & Nezu, 2007) may be helpful in understanding how cancer caregivers address the challenges they face. The model describes five

dimensions of problem solving: two problem orientations (positive and negative) and three problem-solving styles (rational, impulsive, and avoidant). Caregivers with a positive problem orientation tend to see problems as challenges to be solved rather than avoided, and they are generally optimistic that they will be able to solve most of the problems they face. Caregivers with a negative problem orientation tend to view problems as inherently detrimental to their well-being. They may also have a low frustration tolerance and a disbelief in their own ability to solve problems. Caregivers with a rational problem-solving style tend to approach problems methodically and thoughtfully. Impulsive problem solvers tend to approach challenges in a hurried and careless manner, while avoidant problem solvers often put off solving problems for as long as possible and will frequently either wait for problems to solve themselves or try to push responsibility for problem solving onto others (Nezu, Nezu, & D’Zurilla, 2007).

While prior research has focused minimally on problem-solving dimensions among family caregivers, studies of non-caregiving populations have identified differences based on age and gender. With regard to age, research suggests that adaptive problem-solving attributes (i.e., positive problem orientation and rational problem-solving style) generally increase from young adulthood to middle age and then decrease in older adulthood. With regard to gender, research has shown that men tend to score higher on positive problem orientation and lower on negative problem orientation than women (D’Zurilla, Maydeu-Olivares, & Kant, 1998).

Project Rationale and Aims

Research suggests that targeted interventions, such as Problem-Solving Therapy, may reduce cancer caregivers’ distress by encouraging adoption of a positive problem orientation and use of a rational problem-solving style (Washington et al., 2018). However, to date, the extent to which different problem-solving dimensions are exhibited among cancer caregivers in specific

clinical contexts such as outpatient palliative care remains unknown. To address this gap in the knowledge base, researchers conducted an exploratory, descriptive study guided by the following research questions: 1) To what extent do family caregivers of PwC receiving outpatient palliative care report adopting positive and negative problem orientations? 2) To what extent do family caregivers of PwC report use of rational, impulsive, and avoidant problem-solving styles? 3) Do these problem-solving dimensions differ by caregiver gender or age? Understanding caregivers' problem-solving strengths and weaknesses may assist palliative social workers and their interdisciplinary colleagues in tailoring interventions to best meet caregivers' needs.

Methodology

Researchers conducted a secondary analysis of data generated during a randomized clinical trial of a problem-solving intervention for family caregivers of individuals with cancer receiving outpatient palliative care (R21CA191165; Principal Investigator: Washington). Inclusion criteria required that participants in the original trial were English-speaking adult family (i.e., unpaid) caregivers of adult PwC receiving outpatient palliative care. Outpatient clinic personnel introduced the opportunity to participate in the original trial to eligible family caregivers during patients' regularly scheduled appointments and referred interested caregivers to the research team for study enrollment. Consenting caregivers were randomly assigned to one of two conditions: (1) usual care, or (2) usual care plus participation in three Problem-Solving Therapy sessions. Standardized measures were administered approximately 0, 15, 30, and 60 days after study enrollment. Additional detail regarding the original trial has been previously published (Washington et al., 2018).

Data analyzed in the present study included basic demographic information and caregivers' baseline scores on the Problem-Solving Test (PST; Nezu, Nezu, & D'Zurilla, 2007),

a 25-item, Likert-type scale based on the widely used Social Problem Solving Inventory-Revised (SPSI-R; D’Zurilla et al., 1999). The PST generates separate scores ranging from 5 to 25 for each of the five previously described problem-solving dimensions and provides cut-off scores that can be used to identify potential need for additional problem-solving education, training, and practice. For positive problem orientation and rational problem-solving style, scores equal to or greater than 12 reflect a generally positive attitude toward problem solving and a thoughtful, logical problem-solving approach. For negative problem orientation and avoidant and impulsive problem-solving styles, scores equal to or greater than 12 indicate a relatively negative attitude toward problem solving and a passive or careless problem-solving approach (Nezu, Nezu, & D’Zurilla, 2007).

Researchers calculated descriptive statistics of baseline PST results for study participants ($N = 82$) to conduct statistical analyses, which were performed in R 4.1.0. Kendall’s tau-b correlation tests were run to analyze the relationship between age and problem-solving dimensions due to the departure from normality for the problem-solving dimensions and ties between cases. Non-parametric Wilcoxon rank-sum tests with continuity correction were used to analyze the relationships between gender and problem-solving dimensions due to the departure from normality for the problem-solving dimensions.

Results

A summary of participant characteristics is provided in Table 1. Of the 82 participants included in the analysis, 57 (69.5%) identified as female, and 25 (30.5%) identified as male. The mean age of participants was 51.6 years (standard deviation (SD) = 12.8). Additionally, 44 caregivers (53.7%) were the spouse/partner of the care recipient, and 22 (26.8%) were the adult children (including children-in-law) of the care recipient. The relationship to the care recipient for 16

caregivers (19.5%) was categorized as “other,” a category that included all other relative types (e.g., nephew, sibling) and non-relative caregivers (e.g., friend, neighbor).

Table 1

Participant Characteristics

Characteristic	<i>n</i>	%	<i>M</i>	<i>SD</i>
Gender				
Female	57	69.5		
Male	25	30.5		
Relationship to Patient				
Spouse or Partner	44	53.7		
Adult Child	22	26.8		
Other	16	19.5		
Age			51.6	12.8
Problem-Solving Dimension				
Positive Problem Orientation			18.89	3.80
Rational Problem-Solving Style			19.24	4.04
Negative Problem Orientation			11.79	4.45
Impulsive Problem-Solving Style			11.56	3.17
Avoidant Problem-Solving Style			12.19	4.16

Table 1 also displays descriptive statistics for caregivers’ problem-solving dimensions for the full sample. For positive problem orientation, caregivers’ mean score of 18.89 was greater than 12, reflecting a generally positive problem orientation. Caregivers’ mean score for rational

problem-solving style was 19.24, indicating a generally rational problem-solving style. Both negative problem orientation and impulsive problem-solving style had mean scores slightly below the threshold of 12 ($M = 11.79$ and 11.56 , respectively), indicating somewhat low rates of negativity and impulsivity. However, the mean score for avoidant problem-solving style ($M = 12.19$) fell just above the cut-off of 12, reflecting a tendency among some caregivers to withdraw or distract themselves from problems rather than engage in active problem-solving efforts. Correlations between caregivers' problem-solving dimensions and age are shown in Table 2. Statistically significant negative correlations were found between age and positive problem orientation ($\tau\text{-}b = -0.17$; $p < 0.05$), rational problem-solving style ($\tau\text{-}b = -0.24$; $p < 0.01$), and negative problem orientation ($\tau\text{-}b = -0.19$; $p < 0.05$).

Table 2

Problem-Solving Dimensions' Correlations with Age

Problem-Solving Dimension	$\tau\text{-}b$
Positive Problem Orientation	-0.17*
Rational Problem-Solving Style	-0.24**
Negative Problem Orientation	-0.19*
Impulsive Problem-Solving Style	-0.07
Avoidant Problem-Solving Style	-0.11

Notes. * $p < .05$; ** $p < .01$.

Table 3 displays descriptive statistics for caregivers' problem-solving dimensions by gender. There was a significant difference in mean scores between women and men on both negative problem orientation (M difference = 2.81; $p < 0.01$) and impulsive problem-solving style (M difference = 1.90; $p < 0.05$), with women having significantly higher (i.e., worse) scores

for both. No statistically significant differences were identified between women and men with regard to positive problem orientation (M difference = 0.53), rational problem-solving style (M difference = -0.40), or avoidant problem-solving style (M difference = 1.54).

Table 3

Mean Differences in Problem-Solving Dimensions by Gender

Problem-Solving Dimension	Female M (SD)	Male M (SD)	M Difference
Positive Problem Orientation	19.05 (3.29)	18.52 (4.82)	0.53
Rational Problem-Solving Style	19.12 (3.58)	19.52 (5.02)	-0.40
Negative Problem Orientation	12.65 (4.42)	9.84 (3.97)	2.81**
Impulsive Problem-Solving Style	12.14 (3.10)	10.24 (2.96)	1.90*
Avoidant Problem-Solving Style	12.66 (4.27)	11.12 (3.76)	1.54

Notes. M = mean; SD = standard deviation; * $p < .05$; ** $p < .01$.

Discussion

This study sought to describe the extent to which family caregivers of PwC receiving outpatient palliative care report adoption of positive and negative problem orientations and use of rational, impulsive, and avoidant problem-solving styles, and to determine if these problem-solving dimensions are correlated with caregivers' age and gender. With regard to the two constructive problem-solving dimensions (i.e., positive problem orientation and rational problem-solving style), the mean score for all caregivers was well above the cut-off of 12, suggesting that these are relative areas of strength for many caregivers (D'Zurilla & Nezu, 2007). Caregivers' mean scores for problem-solving weaknesses (i.e., negative problem orientation, impulsive problem-solving style, avoidant problem-solving style) hovered near the cut-off of 12, indicating that these are areas of concern for some caregivers (D'Zurilla & Nezu, 2007).

At first glance, identified negative correlations between age and positive problem orientation and rational problem-solving style might appear to conflict with prior research indicating that these constructive dimensions generally increase from young adulthood to middle age and then decrease in older adulthood (D’Zurilla, Maydeu-Olivares, & Kant, 1998); however, it is important to note study participants’ ages. With a mean age of 51.6 years and a standard deviation of 12.8 years, caregivers whose data are reflected here are mostly middle-aged. Rather than conflicting with prior studies, these results appear consistent with earlier research, given that they highlight patterns observed across middle adulthood and into early older adulthood. Although positive and negative problem orientation are separate constructs rather than opposite ends of a single continuum (Robichaud & Dugas, 2005), it is nonetheless challenging to interpret the finding that age was negatively correlated with both positive and negative problem orientation. More research is needed to understand the complex interactions between age and problem orientation.

Gender differences with regard to negative problem orientation mirror those found in earlier studies which, although limited and dated, found higher scores for negative problem orientation among women than men (D’Zurilla, Maydeu-Olivares, & Kant, 1998; Robichaud et al., 2003). Statistically significant gender differences in impulsive problem-solving style were not identified in earlier research (D’Zurilla, Maydeu-Olivares, & Kant, 1998). Both of these findings point to the potentially greater benefit from problem-solving support for female caregivers relative to their male counterparts.

Implications for Social Work Practice

In most busy healthcare settings, the 25-item Problem-Solving Test (Nezu, Nezu, & D’Zurilla, 2007) would likely be too long to be practically included in routine caregiver

assessments. Outside of specific situations in which social workers plan to deliver a structured intervention such as Problem-Solving Therapy, it may be most appropriate to forego formal assessment of caregivers' problem-solving skills and instead use research to shape practice behaviors. For example, the results of this study suggest that many caregivers have a positive problem orientation and approach problem solving in a rational manner. Social workers might highlight these strengths if identified among individual caregivers, seeking to bolster caregivers' self-efficacy and to remind them of strengths that are available to them when facing novel challenges (Milner et al., 2020). Mean scores for caregivers' problem-solving weaknesses (i.e., negative problem orientation, impulsive problem-solving style, avoidant problem-solving style), which hovered near the cut-off for an acceptable range in this study, suggest that palliative social workers should be attuned to behaviors or reactions among family caregivers that would indicate a need for additional support. Such behaviors could include becoming overly frustrated by new problems, problem solving based on a "gut reaction" rather than consideration of multiple options or expressing helplessness to create change despite the existence of viable alternative solutions.

In the absence of sufficient time and resources necessary to fully deliver Problem-Solving Therapy or related interventions, palliative social workers may find it helpful to draw on specific therapeutic tools included in such evidence-based approaches. For example, a social worker might assist an overwhelmed caregiver in brainstorming transportation options for a patient requiring multiple weeks of 5-days-per-week radiation treatments, helping them weigh the pros and cons of various alternatives. As another example, a caregiver who cites a minor sibling conflict as evidence of their family "completely falling apart" might benefit from the opportunity

to reframe their thoughts, accepting that minor disagreements are a normal—and sometimes even beneficial—part of caregiving for many families.

Study Limitations

Study results should be interpreted in light of numerous limitations. First, the original study from which data for the present analysis were drawn was a single site randomized clinical trial including a relatively homogenous sample of family caregivers, limiting the generalizability of the results of the present analysis. Further limiting the results' generalizability is the relatively small study sample of 82 family caregivers. It is unknown if the same results would have been generated if there had been a larger number of participants from multiple sites and/or if the participants had been more diverse. Second, PST data were generated via caregiver self-report rather than direct observation or another potentially more objective method, introducing the risk of bias due to perceptions of social acceptability and/or limitations in participants' ability to accurately self-assess. Finally, although all caregivers who participated in the original trial self-identified as cisgender, the study is nonetheless limited in its conceptualization of gender as a binary construct, a conceptualization that ignores the considerable complexity of gender and gender expression.

Conclusion

Family caregivers of people with cancer receiving outpatient palliative care report generally constructive attitudes and approaches to problem solving, although some problem-solving weaknesses, such as use of an avoidant problem-solving style, may warrant clinical intervention. Identified differences in problem-solving orientations and styles among demographic groups indicate a potentially greater need for assessment and intervention for women and older caregivers.

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