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Urban and Rural Alaskan Physicians’ Knowledge, Attitudes, and Behaviors Regarding Palliative Care

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2020

Abstract

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Mary Bernadette Cavalier

M.Ed., The Johns Hopkins University, 1986

B.A., Point Park University, 1982

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Palliative care provides multidisciplinary treatment of the physical, psychological, social, and spiritual needs of patients and families with serious illnesses. Alaska has the highest per capita rates of serious illnesses in the United States, but many Alaskans lack access to palliative care. Using Engel’s biopsychosocial model of care, Saunders’ total pain theory, and Bandura’s theory of self-efficacy, the purpose of this study was to assess the role of physicians regarding palliative care access in Alaska. This quantitative multivariable regression analysis examined the relationship between 133 Alaskan physicians’ knowledge and attitudes (independent variables) and their behaviors (dependent variable) regarding palliative care; and urban and rural (independent variables) physicians’ knowledge, attitudes, and behaviors (dependent variables) regarding palliative care. Combining 3 validated, reliable scales into 1 survey, the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey, findings showed a statistically significant relationship between physicians’ attitudes and behaviors regarding palliative care and no significant correlation between their knowledge and behaviors regarding palliative care and their knowledge and attitudes regarding palliative care. Findings also showed a statistically significant difference between the urban and rural physicians: regarding palliative care, urban physicians scored higher in attitudes, whereas rural physicians scored higher in behaviors. Aligning attitudes and behaviors with knowledge of palliative care will enhance physicians’ self-efficacy in practice, improving the quality of life and perhaps life expectancy of Alaskans with serious illnesses.

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Dedication

To Wendy Feuer, Jim Brown, my mother-in-law, Mary Wassily, and my mother, Natalie Cavalier, who, in your own ways, taught me the true nature of palliative care. And to Tristan Gomez, who continues to teach me the meaning of thriving with cancer.

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First, I would like to acknowledge my daughter, Ana Gerber-Cavalier, whose expressions of admiration provided the wind in my sails when I thought I could not go on any further. Linda Gerber, my former partner and good friend, always believed in me. Robert Cavalier, my brother, is now not the only doctor in the family. My Latin dance family, despite my efforts to want to cocoon, kept on inviting me out to dance. Richard Curtner helped me stay sane through years of research and statistics courses. Dr. Marc Connelly taught me that physicians are indeed accustomed to death and dying, but reminded me that is not why a doctor goes to school, hence the moral conflict experienced by physicians.

Special thanks go to my colleagues in the critical care unit, surgery, and the palliative care team at the Alaska Native Medical Center. Every day you modeled the courage it takes to walk beside those who are seriously ill. Many thanks also to my employer, Southcentral Foundation, for allowing me to utilize the academic leave for all the years it took to complete this thing.

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Chapter 1: Introduction to the Study

Overview

The topic of this study is Alaskan physicians' knowledge, attitudes, and behaviors regarding palliative care. Palliative care is a multidisciplinary approach to caring for patients with serious illnesses such as cancer. Approaching patients with a serious illness, such a cancer, by addressing their physical, psychological, social, and spiritual needs has demonstrably improved patients' and their families' quality of life, and in some cases has prolonged days of survival (Ferrell et al., 2016). Yet, the National Palliative Care Research Center's 2015 report ranked Alaska last in the country in access to palliative care (R. S. Morrison et al., 2015). This study adds to the body of research in palliative care by examining the challenges that physicians face when implementing palliative care in a state fraught with geographical, medical, and behavioral health disparities. Results of this study may facilitate positive social change in terms of policy making, improved practice approaches with the serious ill, and better educational programs for physicians regarding palliative care.

This chapter provides a concise overview of the research literature related to physicians' knowledge, attitudes, and behaviors regarding palliative care. The chapter also describes the research problem with a summary of the evidence that the problem is current, relevant, and significant to the discipline of palliative care. This evidence also reveals the meaningful gap in the extant research literature. In addition, this chapter provides a concise statement of the study's purpose and research questions. The theoretical foundation is introduced, explaining how theory relates to the study and its research questions. Also provided is the nature of the study, including description of the key variables and a summary of the study’s methodology. This chapter includes concise definitions of the independent (IV) and dependent (DV) variables and key terms. Further, the assumptions about palliative care that are believed to be true but cannot be demonstrated to be true that impact the context of the study are discussed. Moreover, internal and external validity are explored, and the limitations and significance of the study are outlined. Finally, the implications of the study for positive social change are introduced.

Background

Palliative care is a multidisciplinary approach to caring for those with serious illnesses. The research literature reveals that palliative care is a relatively new field of medicine compared to hospice care (Snyder, Hazelette, Allen, & Radwany, 2013). Palliative care provides physical, psychological, social, and spiritual support throughout the trajectory of the illness, in contrast to hospice care, which is dedicated to the caring of those at the end of life. Palliative care introduced early in the care of a patient with a serious illness, such as cancer, has been demonstrated to improve not only the quality of life but also to extend life (Irwin, Greer, Khatib, Temel, & Pirl, 2013; Temel et al., 2010).

Despite these findings of improved quality of life and lifespan, physicians, in general, struggle with the inclusion of palliative care because of the attitude that palliative care represents failure to find a cure (Horowitz, Gramling, & Quill, 2014). Research indicates that physicians lack the knowledge that palliative care provides hope for patients and their families by addressing the existential suffering that accompanies serious illness, such as cancer (Antiel, Curlin, James, Sulmasy, & Tilburt, 2012; Boston, Bruce, & Schreiber, 2011; Davison, Jhangri, & Koffman, 2014; Potosky et al., 2011) . Thus, physicians' behavior in the care of cancer indicates that they experience treatment as a battle to be won, and not winning as personal and professional failure (Ellis, Blanke, & Roach, 2015). This attitude has a harmful impact on the patient's quality of life and economic health (Ellis et al., 2015). Aziz, Grady, and Curtis (2013) reported a steady increase in medical schools' inclusion of palliative care clinical programs throughout the United States. Despite the increase in access to palliative care, significant deficits remain in the knowledge that physicians from all disciplines have about the effectiveness of palliative care.

Downing and Jack (2012) studied the challenges faced by seriously ill patients living in rural and remote areas throughout the world. In their research, the authors identified challenges for such patients including scarcity of medical resources, needing to travel significant distances for care, limited access to running water, and limited access to medication. Additionally, they found a lack of knowledge of the principles of palliative care in physicians who treated patients in rural and remote areas. As in other rural areas, Alaskan patients and their families face medical, psychological, social, spiritual, and economic hardships due the geographical, medical, and behavioral health care disparities that exist in the state (DeCourtney, Jones, Merriman, Heavener, & Branch, 2003).

Multiple research studies point to the critical need for examination of the relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care (Beccaro, Lora Aprile, Scaccabarozzi, Cancian, & Costantini, 2013; Cocconi et al., 2010; Hirai et al., 2011; Zhou, Stolzfus, Houldin, Parks, & Swan, 2010). The purpose of the present study was to help fill the gap in the literature as identified by the research cited in the previous section, by surveying Alaskan physicians on their knowledge, attitudes, and behaviors regarding palliative care.

Problem Statement

Alaskan physicians' training does not appear to incorporate palliative care, resulting in substandard care for those patients involved with palliative care in Alaska. Per the most recent statistics, Alaska has the highest rate, per capita, of cancer, heart disease, and chronic pulmonary lung disease in the United States (Jemal et al., 2011; Torre et al., 2015). Yet, national studies show Alaska ranks last in providing palliative care to patients with serious illnesses (T. C. Lewis et al., 2004; R. S. Morrison, Augustin, Souvanna, & Meier, 2011; C. B. Smith, Bonomi, Packer, & Wisnivesky, 2011). In addition, there are disparities between access to medical services between those living in urban areas and rural Alaska (M. E. Johnson, Brems, Warner, & Roberts, 2006).

Research points to the critical need for the examination of the relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care (Beccaro at al., 2013; Cocconi et al., 2010; Hirai et al., 2011; Zhou et al., 2010). Further, research is needed to examine the differences between rural and urban physicians' knowledge, attitudes, and behaviors regarding palliative care (Brazil, Kaasalainen, Williams, & Dumont, 2014; Brems et al., 2007; Castleden, Crooks, Schuurman, & Hanlon, 2010; Downing & Jack, 2012). Hence, this study was unique in that it examined physicians' knowledge, attitudes, and behaviors regarding palliative care in urban and rural Alaska.

Purpose of the Study

The purpose of this study was to help fill the gap in research about the knowledge, attitudes, and behaviors of urban and rural Alaskan physicians regarding palliative care. This purpose was accomplished by conducting a non-experimental, quantitative study that examined the relationship between Alaskan physicians' knowledge and attitudes (i.e., the IVs) and their behaviors regarding palliative care (i.e., the DV). In addition, this study was designed to determine whether there was a difference between physicians who practice in urban versus rural areas, in their knowledge, attitudes, and behaviors regarding palliative care.

Research Questions and Hypotheses

The first research question, null hypothesis ($H_0 1$), and alternative hypothesis ($H_a 1$) were as follows:

Research Question 1 (*RQ1*): Does a relationship exist between Alaskan physicians' knowledge and attitudes regarding palliative care and their behaviors regarding palliative care?

$H_0 1$: There is no relationship between the physician's knowledge, attitudes, and behaviors regarding palliative care.

$H_a 1$: There is a significant positive relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care.

In addition, this study compared the difference between physicians practicing in urban and rural areas (IVs) and the physicians' knowledge, attitudes, and behaviors (DVs) regarding palliative care. The second research question and related hypotheses were as follows:

Research Question 2 (*RQ2*): Is there a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care?

$H_0 2$: There is no statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

$H_a 2$: There is a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

Theoretical Framework for the Study

The theoretical frameworks for this study were Engel's (1977) biopsychosocial model of care, Saunders' (1981a) total pain theory, and Bandura's (1977, 1982) theory of self-efficacy. Each of these theorists developed the concepts of the integration of self in well-being concurrent with the start of the hospice movement in America. This study synthesized these theories as the theoretical foundation for the significance of physicians employing palliative care principles with patients with serious illnesses such as cancer.

Engel's (1977) biopsychosocial model is accepted in the fields of medicine, psychology, and social sciences because it offers a holistic approach to understanding the experience of the patient. The model posits an explanation for the interplay between the patient's experience of physical pain, psychological distress, behaviors, and social environment (Engel, 1977; Suls & Rothman, 2004). Engel's model has been a foundation for the principles of palliative care (Brumley et al., 2007; Daneault et al, 2003; Ng, Crawford, & Chur-Hansen, 2016). Applying Engel's theory in this present research offers insight on the relationships between the physicians' knowledge, attitudes, and behaviors regarding palliative care. Additionally, Engel's model provides a framework for exploring the differences in these relationships between urban and rural physicians practicing in Alaska.

Developed by Saunders (1981a), total pain theory describes a holistic approach to the presentation of pain in patients with serious illnesses (Clark, 1999). Saunders (2006) spoke of the need to address not only the physical manifestations of the illness, but the patient's psychological, social, and spiritual needs as well. Taking this holistic approach, Saunders (2000) argued, decreases the patient's suffering significantly, resulting in the patient needing less opiates for pain management. The goal of palliative care is for the patient to live life fully throughout the progression of the disease. Although Saunders' (2000) work focused on the end of life, palliative care includes working with patients as they pursue curative treatments as well as the stage at which no cure is possible.

Bandura's (1977, 1982) theory of self-efficacy focuses on one's attitude regarding succeeding in a task, such as working with a patient with a serious illness. Self-efficacy is the belief that one is capable in reaching a goal or performing a task (Bandura, 1982). Individuals with high self-efficacy have the attitude that they have the ability to meet the requirements or expectations of the task. This contrasts with those with low self-efficacy, who doubt their ability to succeed at the task. This present study examined physicians' knowledge, attitudes, and behaviors regarding palliative care. The degree of physicians' self-efficacy was reflected in their belief in their self-efficacy in using palliative care.

Engel (1977), Saunders (1981a), and Bandura (1977, 1982), in their respective disciplines, addressed the interplay between mind, body, and spirit. The use of these theories in informing this study incorporates the foundational cornerstone of palliative care today as evidenced by the integration of the physical, psychological, social, and spiritual well-being of the patient and family. These three theoretical approaches applied to the medical practice of the physician evince the need for understanding the extent of physicians' knowledge of, attitudes toward, and behaviors regarding the practice of palliative care. A more detailed discussion of these three theories follows in Chapter 2. The critical review of the literature in Chapter 2 reveals that the foundations of physicians' training preclude the holistic approach needed for treating patients with a serious illness such as cancer.

Nature of the Study

The nature of this study was a non-experimental, quantitative design (Gravetter & Wallnau, 2012). A cross-sectional, confidential, self-administered survey was mailed to a randomly selected sample of physicians in urban and rural Alaskan communities. The non-experimental method fit this study because the study's external validity was of the utmost importance to allow advancement of knowledge in the field by generalizing the findings in the field of palliative care (Frankfort-Nachmias et al., 2014). In enabling generalization of this study's findings, the results add to the body of research in this field and provide increased knowledge about the value of palliative care. In addition, the findings are helpful in addressing the attitudes and behaviors of physicians practicing palliative care (Frankfort-Nachmias et al., 2014). This study examined the IVs of the physicians' knowledge and attitudes, in relationship to the DV of their behaviors, regarding palliative care. In addition, this study examined the differences between physicians practicing in urban and rural areas (IVs) and the physicians' knowledge, attitudes, and behaviors (DVs) regarding palliative care.

A cross-sectional, confidential, self-administered survey was mailed to a randomly selected sample of physicians in urban and rural Alaskan communities. To answer RQ1, multiple linear regression was used to test the ability of knowledge and attitudes (i.e., two predictor variables) to predict physicians' behaviors with palliative care (i.e., the criterion variable). To answer RQ2, MANOVA was used to test the difference between urban and rural physicians' (i.e., the IV with two levels) knowledge, attitudes, and behaviors (i.e., the DVs) regarding palliative care. A current version of SPSS was used for data management and statistical analysis.

Definitions

The following terms have specialized meaning herein. For each such term, pertinent definitions in the literature are presented with discussion of the differences in those competing definitions. Each such discussion concludes with the definition of the term as used herein.

Alaska physicians: Physicians who (a) resided, (b) were licensed to practice medicine, (c) were in good standing, and (d) were actively practicing in the state of Alaska at the time of the study.

Palliative care: Palliative care treats the physical, psychological, social, and spiritual symptoms of the patient and family experiencing a serious illness (Beccaro et al., 2013).

Physicians' attitudes regarding palliative care: Physicians' attitudes regarding palliative care are the physicians' beliefs about the treatment of patients with serious illness (Davison et al., 2014).

Physicians' behaviors regarding palliative care: Physicians' behaviors regarding palliative care reflect the physicians' self-efficiency in providing care to patients and their family members (Beccaro et al., 2013).

Physicians' knowledge regarding palliative care: Physicians' knowledge regarding palliative care is physicians' understanding of the holistic approach required in the treatment of patients with a serious illness (Head et al., 2016).

Rural physicians: Rural physicians are those who practice in Alaska with a population density of less than 1,000 people per square mile (U.S. Census Bureau, n.d.). This includes physicians practicing on the road system or off the road system with limited access to major medical centers.

Urban physicians: Urban physicians are those who practice in Alaska with a population density of 1,000 or more people per square mile (U.S. Census Bureau, n.d.).

Assumptions

Assumptions are aspects of the study that were believed to be true but when examined may not have been true (Fields, 2013). The first assumption in this study was that there was a linear relationship between the IVs (knowledge and attitudes) and DV (behavior). The linear relationship between the variables would demonstrate that there was a relationship between the physician's knowledge and attitudes with the behavior of applying the principles of palliative care (Fields, 2013). The second assumption was that the sample size (discussed in detail in Chapter 3) was adequate. These assumptions were necessary for this study to ensure that the conclusions based on analysis of the data could be generalized to the population of physicians working with patients with serious illness such as cancer.

Scope and Delimitations

The scope of this study involved physicians who were licensed and lived in the state of Alaska. Review of the state of Alaska physicians' licensing roster of all practicing physicians in Alaska (Groves et al., 2009) revealed that physicians might be licensed in Alaska but not reside in the state. To address the threat to internal validity, selection was narrowed to physicians both residing and licensed in the state of Alaska. Furthermore, the study used physicians who were identified on the roster as actively practicing Alaska at the time of the study. A delimitation of this sampling approach was exclusion of physicians who commuted from other states to practice in Alaska. The danger of this sampling approach was that it excluded physicians who practiced in rural Alaska on a part-time basis, thusly limiting the sample of rural physicians. External validity of the study was addressed by a random selection process to ensure that the sample represented physicians throughout the state. Follow-up postcards to remind physicians of the survey were sent to encourage physicians to return the completed survey, ensuring adequate sample size for external validation.

In terms of theory, the theory on terror management was considered for this study. As explicated in Becker's (1975) *The Denial of Death*, the theory explored the ramifications of the anxiety associated with death. Further examination of the theory revealed that although the theory addressed the existential anxiety physicians have about death, terror management did not encompass the foundations of palliative care addressed in this study (Kastenbaum, 2009).

Regarding generalization, this study examined the relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care. Although the sample for this study was physicians licensed and practicing in Alaska, the findings are generalizable to all physicians because of the education that all physicians undergo related to treating illness (Ingleton, Gardiner, Seymour, Richards, & Gott, 2013). This study examined the struggles that physicians in general face, that not all diseases are curable and patients die (Gawande, 2014).

Limitations

A potential limitation of this study was that responses may have been limited to only physicians interested in the subject of palliative care. This was addressed by a demographic self-report question on the physician's comfort with utilizing palliative care. Another limitation anticipated in the study design was the potential for an inadequate number of returns. If this occurred, a remailing of the survey would have been done, this time selecting a stratified sample of every fifth physician rather than every tenth one. This concern was addressed by utilizing systematic sampling of the roster of all practicing physicians in Alaska (Groves et al., 2009). The use of systematic sampling ensured the population was evenly sampled (Groves et al., 2009).

Selection bias could occur in that specific demographics such as region or professional experience may have been underrepresented. To address this concern, I abided rigidly to the statistically indicated sample size for representation of urban and rural areas by getting at least as many rural as urban participants to achieve an adequate sample size for each group.

Significance

The significance of the current study is its focus on Alaskan physicians' knowledge, attitudes, and behaviors regarding palliative care. This study augments the body of research in this area with examination of the challenges that physicians face when implementing palliative care in a state fraught with geographical, medical, and behavioral health disparities.

This study may facilitate positive social change by informing stakeholders of the need to improve the care Alaskan physicians provide to patients with a serious illness. Research has shown that implementation of palliative care practices, such as addressing psychological distress and social supports early in the disease process, has extended life span (Byock, Sheils Twohig, Merriman, & Collins, 2006; Hughes & Smith, 2014; T. J. Smith et al., 2012; Temel et al., 2010). The mechanism by which this occurs is emphasis on quality of life by increasing in the patient's autonomy, which becomes possible when pain is reduced (Green, Montague, & Hart-Johnson, 2009). In addition, palliative care is a cost-effective way to treat serious chronic illness by decreasing the needs for hospitalization and emergency rooms visits (Gómez-Batiste et al., 2014; Lakdawalla et al., 2012; Pyenson, Connor, Fitch, & Kinzbrunner, 2004). Results of this study may facilitate positive social change in terms of policy making, improved practice approaches with the serious ill, and better educational programs for physicians regarding palliative care.

Summary

This chapter outlined the study's purpose: to add to the body of research of physicians' knowledge, attitudes, and behaviors regarding palliative care. Using validated and reliable tools, this non-experimental, quantitative study examined the relationship between the IVs of physicians'' knowledge and attitudes, and the DV of physicians' behaviors, regarding palliative care. In addition, this study was designed to determine whether there was a difference between rural and urban physicians' knowledge, attitudes, and behaviors regarding palliative care.

The next chapter, Chapter 2, the literature review, describes the method and scope of the literature review regarding the years searched and the types of sources used, including seminal and current peer-reviewed literature. Chapter 2 also describes the major theoretical foundations informing the topic and design of this study. The chapter presents critical review and synthesis of studies relevant to the research questions on physicians' knowledge, attitudes, and behaviors regarding palliative care in urban and rural Alaska.

Chapter 2: Literature Review

Overview of the Review of the Literature

Alaska has the highest rate, per capita, of serious illnesses such as cancer, heart disease, and pulmonary diseases in the United States, per the most recent statistics available (Jemal et al., 2011; Torre et al., 2015). Living in Alaska with a serious illness is challenging. In getting treatment, patients and their families face difficulty in accessing medical services due to the state's vast geographical span. In addition, there are significant social and behavioral health disparities throughout the state (Brems et al., 2007; Gone & Trimble, 2012; Singh & Siahpush, 2014; Wallerstein, 2013). The interdisciplinary approach used in palliative care reduces these stressors and increases overall quality of life (Abarshi et al., 2011). Yet, although physicians value the intention of the palliative care specialty, they tend to refer too late for their patients to benefit from early interventions provided by the palliative care team (Akashi, Yano, & Aruga, 2012). Further, in Alaska, physicians face not only the paradigm shifts required in patient-centered care but also the lack of resources available to treat the high number of patients with serious illnesses (Driscoll et al., 2013). For example, as evidenced by a state-by-state report card on the availability of palliative care, Alaska earned the grade of "D" (R. S. Morrison et al., 2011).

This literature review herein illustrates that the physician's training of aggressive, curative treatment is contradictory to the person-centered approach used in palliative care (Esserman et al., 2014; Patel, Moore, & Milstein, 2015). Palliative care addresses the patient beyond the physical manifestations of the disease. Palliative care encompasses not only the physical but also the psychological, social, and spiritual well-being of the patient with a serious illness (Schaefer et al., 2014). It also embodies the principles of shared decision-making with the patient and the family (Barry & Edgman-Levitan, 2012). The purpose of this dissertation study was to help fill the gap in the literature as identified in the research cited in the previous section, by surveying Alaskan physicians on their knowledge, attitudes, and behaviors regarding to palliative care.

This literature review examines five realms. First reviewed are physicians' training and methods, specific to the methods used to teach physicians, which shape their knowledge, attitudes, and behaviors regarding palliative care. Second is literature on cancer: the statistical data on cancer, showing that at the time of this research, Alaska had the highest rate of cancer per capita in the country, with a disproportionate representation in rural and remote areas; and the language of cancer: the framing of cancer as "a battle to win," which is counterintuitive to the principles of palliative care. The third key literature reviewed is that of palliative care: the approach to serious illness that includes the physical, psychological, social, and spiritual aspects of the patient and the family. Fourth in this review is literature on the interdisciplinary team approach in palliative care: the approach by which palliative care teams work in conjunction with the primary health care team, to provide the other specialists and primary care providers information about the interplay of the psychological, social, and spiritual facets of the patient's physical symptoms. Completing the review is literature on palliative care in Alaska, noting the unique challenges faced by physicians treating patients in urban and rural areas in Alaska. In summary, this chapter informed the need for and design of this dissertation study by evaluating the research on these five realms. The sections that follow include Literature Search Strategy, Theoretical Foundation, and Literature Related to Key Variables. The chapter ends with a summary, and a preview of Chapter 3.

Literature Search Strategy

Walden University Library and Alaska Medical Library were used to locate relevant articles and book chapters for this study. The following databases were used to search during the years 1960 through 2016: Medscape, PubMed, MEDLINE, Science Direct, CINAHL Plus with Full Text, ProQuest Health and Medical Complete, Cochrane Database of Systematic Reviews, and Google Scholar. The following websites were used: World Health Organization (WHO, n.d.a; n.d.b) and State of Alaska (State of Alaska Department of Health Social Services, Division of Public Health, 2011). Seminal books by Becker (1975) and Saunders (2006) were in my personal library. Keywords used were palliative care, biopsychosocial model, total pain theory, physician training, economic burden, intensive care unit, interdisciplinary teams, support system, community health aides, urban and rural health care.

Theoretical Foundation

The theoretical foundations used for this project were Engel's (1977) biopsychosocial model, Saunders' (1981a) total pain theory, and Bandura's (1977, 1982) theory of self-efficacy. These three theoretical foundations give credence to the necessity to integrate psychological, social, and spiritual well-being into the treatment of the physical symptoms of a patient with a serious illness and the physicians' behavior in implementing palliative care for those with serious illnesses such as cancer.

Biopsychosocial Model

Engel’s (1977) biopsychosocial model addresses the physical, psychological, and social aspects of illnesses (Suls & Rothman, 2004). As discussed by Suls and Rothman (2004), the biopsychosocial model addresses the complexity involved in serious illnesses such as cancer. Palliative care is a growing field that emphasizes the need for interdisciplinary approach in caring for person with serious illnesses. The biopsychosocial model presents a framework that explains the interplay between physical symptoms, psychological distress, and impact of the social environment on the patient's quality of life (Engel, 19**77**; Kumar & Kumar, 2013). Engel argued that psychological and social stressors impact a patient’s physical health. The interconnection between the biomedical, psychological, and social factors in a patient’s life impacts the immune system’s ability to ward off disease. Engel challenged the conventional wisdom that there are three distinct and separate approaches to disease: the biomedical, the psychological, and the sociocultural.

In that conventional view, the biomedical approach views the patient as an organism which is defective (Engel, 1977). The biomedical approach relies solely on objective data obtained through laboratory tests. It tackles the symptoms from a reductionist approach which then fits into an algorithm aimed at curing the patient. Engel (1977) argued that such an approach excludes the patient’s psychological expressions of the symptoms.

The psychological expressions of the symptoms, as Engel (1977) observed, is the patient’s subjective experience of the symptoms. Engel argued that paying attention to the patient’s verbal and nonverbal expressions used in describing the symptoms guides the physician in discerning the differences between an organic condition or a stress reaction that is impacting physical health. Engel used the example of grief to demonstrate this interplay between the biomedical and psychological factors presented in the symptoms. Grief can be the result of the death of a significant other or, for the purpose of this dissertation study, the anticipatory grief experienced by the patient diagnosed with a serious illness. This grief is also known as *suffering*. The suffering manifests itself in uncontrollable pain that defies the physical condition. The physician who does not address the suffering risks undermanaging the pain, which in turn has consequences for the patient’s quality of life.

In addition to the biomedical and psychological aspects of the patient’s worldview, Engel (1977) advocated for the inclusion of a third factor that influences the patient: the sociocultural influences. Engel encouraged the inclusion of the patient’s social support system and overall cultural schemas that influence the patient’s understanding of the biomedical condition. Engel identified such influences as a critical piece of the puzzle in treating patients. For instance, the patient’s social support system can impact the patient’s decision-making about treatment. An illustration of sociocultural influences is the patient with metastatic cancer who does not want to continue chemotherapy due to biomedical side effects, but whose family fears that stopping chemotherapy will result in the patient’s death. For the sake of the family, the patient may decide to continue the chemotherapy despite its adverse effects on the quality of life.

Another component of Engel's (1977) theory that influences both the patient and the patient's support system is the cultural schemas that define the biomedical conditions such as cancer. Engel theorized that the cultural schema of an illness influences the patient's biomedical and psychological experience of the condition. In some cultures, for example, diseases are viewed as an infliction of weakness or religious persecution. The physician approaching the symptoms solely from a biomedical model may be perplexed by the patient's shame or embarrassment about the condition. Engel posited that through motivational interviewing, the physician can understand the adverse effects the patient's cultural schema on the treatment of the physical condition. Engel stressed the importance of such meaningful discussions with the patient and family members to get a true assessment of the patient's experience of the condition. Such inclusion of the sociocultural influences can validate the patient's experience, which in turn fosters improved adherence to treatment. Such discussions also improve the quality of the relationship between the patient and the physician.

Engel (1977) also addressed the societal expectations of the physician as a healer. As such, the patient, and for that matter, the physician, expect to be able to heal the condition. But as Engel noted, without the inclusion of the psychological and sociocultural aspects influencing each patient's condition, the physician could feel as if he or she was failing the patient. Patients in turn could lose faith in the physicians' ability to heal them. Engel argued the importance of the breaking down the disciplinary silos to better treat the whole person. Engel's model manifests today in the principles of palliative care.

Engel’s (1977) biopsychosocial model has become the cornerstone of palliative care (Ng et al., 2016). The model challenges the reductionist methods used in the biomedical approach toward the patient. The biopsychosocial model takes into account the emotional and social impact of medical treatments on the patient and the family coping with a serious illness. For example, Ng et al. (2016) described the depression that results from the cycle of hope and disappointment experienced by cancer patients undergoing chemotherapy. Ng et al. also addressed the social factors of the denial of death that patients experience from their physician, family, and friends, which leads to a profound sense of loneliness. They concluded that the necessity of teaching physicians the holistic approach used in palliative care is imperative to improve cancer patients’ quality of life.

Engel (1980) argued that the reductionist model taught in medical school negates three quarters of the individual (Adler, Marchand, & Heap, 2019). The biomedical model, which continues to be the dominate model used today in medicine negates the patient’s psychological, social, and (as discussed later in this section) spiritual aspects. Engel observed that physicians examine the patient through the lens of the scientific method. The patient describes the symptoms; the physician orders laboratory tests that lead to a hypothesis of the diagnosis, which in turn leads to the treatment plan that will alleviate the patient’s distress. In this approach, the physician-patient relationship is limited to physiochemistry of the manifestation of the disease. The problem with this model, as Engel discussed, is that it does not take into account the balance or entirety of the patient’s story which influences the patient’s symptoms and outcomes. Without the balance of the story that includes the patient’s emotional and social experiences associated with the condition, the physician overlooks the complete relationship with the patient that is necessary to fully engage the patient and family in treating serious illnesses. Conversely, it must be noted that the psychologist who negates the biomedical information of the patient risks mistreating a medical condition, such as depression, which may be a symptom of thyroid cancer, for example. Yet almost 40 years after Engel promulgated the biopsychosocial model, the dominate model is still the biomedical model. Ng et al. (2016) stressed the necessity for medical schools to train physicians in palliative care to address the multifaceted manifestations of a disease. This literature review provides evidence that Engel’s (1977) biopsychosocial model works well in the care of patients with a serious illness in both urban and rural areas of Alaska. This review also reveals physicians’ attitudes and behaviors toward and lack of knowledge of palliative care with patients with serious illnesses.

Total Pain Theory

Developed by Saunders (1981a), total pain theory describes the holistic approach to the presentation of pain in patients with serious illnesses (Clark, 1999). Saunders, who was trained as a nurse, social worker, and physician, was a Catholic. This combination of influences provided Saunders with a unique perspective on the patient’s experience of pain. Total pain theory stemmed from Saunders’ study of patients’ experience of dying in a hospice. Saunders described how patients explained their pain from a holistic perspective that went beyond the physical pain.

Using total pain theory (Saunders, 1981a) in assessing a patient’s pain allows the physician to understand both the patient’s objective presentation of pain and subjective perception of pain. Saunders argued that without the inclusion of the patient’s subjective perception of the pain, the patient was more likely to seek more analgesic pain control. Saunders observed in practice that the inclusion of the patient’s subjective, existential explanations of pain reduced the patient’s dependency on pain medication. But Saunders argued that such inclusion requires the physician to truly listen to the patient to hear the physical, psychological, social, and spiritual distress the patient is experiencing. Saunders acknowledged that such listening requires time, time rarely available in the physician’s schedule. Saunders suggested that utilizing an interdisciplinary approach with the patient, these existential questions can be explored properly to address the patient’s total pain effectively.

Saunders’ (1981a) total pain theory was the first to address spiritual issues in the management of pain for those with a serious illness (Saunders, 2006). Spirituality, as Saunders explained, goes beyond the patient’s religious beliefs, or lack thereof, but broadly addresses the wider scope of one’s actions throughout life; Saunders suggested examples such as unresolved guilt over past actions, or a sense of meaninglessness of life in light of dying. Facing the existential questions of the meaning of one’s life can be a source of suffering that distorts the patient’s experience of pain. Saunders suggested that allowing the patient to explore areas of self-pity, unresolved anger (including anger toward God), guilt, and fear of what happens after death helps the patient come to terms with the present. Saunders noted that the patient talking about and the physician acknowledging such issues aid in pain management.

Total pain theory (Saunders, 1981a) is the theoretical foundation of palliative care today (Saunders, 2000). Addressing the physical, emotional, social, and spiritual needs of the patient not only ensures management of the dying patient's pain, but also completion of the patient's life business. Saunders attended to patients' ability to complete their lives so that they could die peacefully. In an article on the evolution of palliative care, Saunders (2000) observed that applied palliative care principles reduce the patient's wishes for euthanasia. This outcome is due to address of not only the physical pain but also the suffering that accompanies serious illnesses.

Today, the goal of palliative care is for the patient to live life fully throughout the progression of the disease. Although Saunders' (2000) work focused on the end of life, palliative care today includes working with patients as they pursue curative treatments and into the stage at which no cure is possible. The theoretical foundations set by Saunders are the cornerstones of palliative care today.

Self-Efficacy Theory

Bandura (1977) was a social psychologist who developed the theory of self-efficacy. Self-efficacy is belief in oneself as being capable in performing tasks. Bandura's research first focused on athletes. Athletes who had poor self-efficacy performed poorly on the field. Conversely, athletes who had high self-efficacy performed exceptionally well. Thus, Bandura found that belief in one's ability directly impacts behavior in performing a task. As with athletes, physicians' belief in their ability to implement the principles of palliative care impacts their performance in providing care to those who are seriously ill (Phillips, Salamonson, & Davidson, 2011a). To have high self-efficacy in palliative care, physicians need to believe in their ability to effectively communicate prognoses or efficiently manage pain symptoms associated with serious illnesses such as cancer (Coulourdides Kogan, Penido, & Enguidanos, 2015).

Bandura’s (1977, 1982) theory of self-efficacy describes the influence of individuals’ beliefs in their ability to perform difficult tasks. A physician who has a high self-efficacy in curing a patient may believe that discussing a terminal diagnosis diminishes hope in the patient, thus doubting his or her ability to have such discussions (Coulourdides et al., 2015). Such doubts in one’s capacity to perform such a task may prolong the patient’s suffering (Stanley & Campos, 2016). This scenario contrasts with the situation when the physician learns new behaviors that improve self-efficacy. Bandura (1977) pointed out that one acquires such new behaviors through modeling. In medicine, residents starting out in the field learn skills, such as communicating with patients about difficult topics, through the modelling of senior physicians (Raoof, O’Neill, Neumayer, Fain, & Krouse, 2017). Such modeling improves the physician’s self-efficacy in palliative care (Raoof et al., 2017).

The physician who has high self-efficacy in the behaviors associated with palliative care can communicate effectively with the patient regarding end-of-life issues such as existential fears (Coulourdides et al., 2015). In addition, the physician with high self-efficacy will feel competent in treating physical symptoms, such as nausea and pain, that severely impact the quality of life for patients, for instance, with end-stage cancer

(Eyigor, 2013). Phillips et al. (2011a) found that the physician who has high self-efficacy can improve the quality of life for the patient with a serious illness such as cancer. Conversely, physicians with poor self-efficacy fail to feel competent in treating those who are suffering with cancer (Phillips et al., 2011a). Thus, Bandura's (1977, 1982) the theory of self-efficacy is relevant to this study because it examines physicians' belief in their capacity to treat patients with a serious illness. This belief translates to the behaviors associated with effective palliative care (Phillips et al., 2011a).

These three theoretical approaches applied to the medical practice of the physician evince the need for understanding the degrees of physicians' knowledge of, attitudes toward, and behaviors regarding the practice of palliative care. The literature review reveals that the foundations of physicians' training preclude the holistic approach needed for treating the patient with a serious illness. The next section examines the components of the physicians' training that comprise the genesis of the problem in cooperative palliative care at the time of diagnosis of a serious illness.

Literature Review Related to Key Variables

The literature review provides discussion on relevant research in palliative care, and physicians' knowledge of, attitudes toward, and behaviors regarding palliative care. The review explores the principles of palliative care, and how physicians struggle with the implementation of palliative care for their patients with serious illnesses such as cancer. Also reviewed herein are the multifaceted components of cancer that impact the patient, family, and physician. In addition, the review appraises the unique conditions faced by patients living in Alaska.

Palliative Care

Palliative care differs from hospice. Hospice and palliative care blossomed in the 1960s when modern medical technology rose to a level at which physicians could suspend patients between life and death (Mount, 1976). The advent of intensive care units (ICUs) with ventilators and chemotherapy provided hope of a longer life for those with terminal illnesses. But this change was not without its cost. Physicians, who are trained to cure disease, now had more technology at their disposal to prolong life. But for patients with malignant diseases, there were no options but to inform them that nothing more was possible. The hospice and palliative care movement was designed to give a different type of hope for patients and family members when the curative path ends (Clark, 2007). Hope shifted from a longer life to the hope to address unresolved life issues, have pain managed, and come to terms with the end of their life with peace and dignity. Over time, the two disciplines of hospice and palliative care have grown into similar yet different approaches to care for patients and families with serious illnesses.

In many ways, hospice and palliative care are similar in that the care focuses on the physical, psychological, social, and spiritual needs of a patient and family coping with a serious illness (Hui et al., 2013). The key difference between the two is that palliative care has evolved from the care of patients at the end of life to earlier care at the time of the diagnosis of a serious illness. Hospice focuses on the end of life. In the US, end of life is determined to be when the patient has stopped all curative treatments and has less than 6 months to live. Palliative care works with the patient throughout the time when they are pursuing curative treatments, and transfers care to hospice at the end of life.

Like hospice, palliative care involves an interdisciplinary team including physicians, nurses, psychologists, social workers, and chaplains who are uniquely trained to manage the biopsychosocial and spiritual symptoms of the patient and family. Unlike hospice, the palliative care team works in conjunction with the patient's primary care physician and specialists such as oncologists to address issues as they arise in the patient's life. Despite decades of forging forth in palliative care, physicians' lack of understanding continues about the benefits of palliative care. The purpose of this study was to examine the relationship between Alaskan physicians' knowledge, attitudes, and behaviors regarding palliative care. In addition, this study explored the difference between rural and urban physicians' knowledge, attitudes, and behaviors regarding palliative care.

Physicians' Knowledge of Palliative Care

Palliative care approaches serious illness from a holistic perspective that includes the physical, psychological, social, and spiritual aspects of the patient's experience of the illness. Traditionally, medical schools have not trained physicians to see beyond the physical manifestation of the disease. Medical students are trained to follow evidence-based algorithms that determine diagnosis, treatment, and projected outcomes (Greenhalgh, Howick, & Maskrey, 2014). Greenhalgh, Howick, and Maskrey (2014) argued that the use of such algorithms negate patient-centered care for time efficiency. Although the purpose of development of such evidence-based algorithms was to improve quality care, it has morphed into the type of care that precludes the physical and psychological presentation of the patient in front of the physician. Greenhalgh et al.

(2014) emphasized that especially in this era of a population growing old and presenting with multiple comorbidities, the algorithms fail both the patient and the physician in accurately diagnosing and treating the conditions.

Greenhalgh et al. (2014) asserted that the evidence-based research from which the algorithms were created was conducted and funded by pharmaceutical companies, thus raising the question of efficacy of the recommended treatments, particularly with patients who are seriously ill. In addition, such evidence-based algorithms are geared toward treating disease aggressively. Such algorithms do not allow for the complex, serious illnesses that defy medical interventions. These diseases, and subsequently, the patients, fall out of the statistical norms, and thus risk insufficient care. Physicians are not trained adequately to manage such patients nor practice patient-centered care in general (Greenhalgh et al., 2014).

Education on and use of evidenced-based algorithms are still important but must include the subjective perceptions of the patient before a diagnosis is made. Most significantly, Greenhalgh et al. (2014) insisted that evidence-based algorithms must be personalized in order to treat the person, not just the numbers. The authors reasoned that it was imperative to build a physician-patient relationship in order to address the complex health needs of patients with a serious illness (Greenhalgh et al., 2014). Both the physician and patient must be active participants in the process of diagnosis and development of the treatment plan. Physicians' education should include motivational interviewing skills that will reveal the biopsychosocial and spiritual needs of patients and their families (Greenhalgh et al., 2014).

Nasca, Weiss, and Bagian (2014) argued that in the drive to learn to treat aggressively, medical institutes were failing to teach physicians core concepts such as focusing on the patient and not just on the test results. Although the clinical pathways used in diagnosis allow the physician to treat aggressively and alleviate the physical manifestations of the disease, they hinder the physician from observing the whole patient (Nasca et al., 2014). Excluding the whole person in favor of the narrow focus of treating aggressively only magnifies the isolation of patients with chronic and serious illnesses.

The Patient Protection and Affordable Care Act of 2010 ushered in a model of patient-centered care which demands that physicians step out of the comfort zone of the algorithm approach to diagnosis and treat the whole person (Oshima Lee & Emanuel, 2013). Patient-centered care requires shared decision-making between the physician and patient. This involves the physician in practicing motivational interviewing to ensure the patient understands not only the diagnosis but also the ramifications of treatment. Oshima Lee and Emanuel (2013) stated that the majority of patients' wishes were not taken into consideration when they wanted palliative care. Patients involved in shared decision-making were more likely to choose less invasive surgical procedures and less aggressive treatment, especially when treating malignant cancers. But this shared decision-making means that physicians must put aside their own agendas in treating the disease even when there is no cure. The physician needs learn to truly listen to the patient. In doing so, the physician begins to understand the whole person. Physicians need to learn a new approach to treating not just the disease but also the psychosocial and spiritual realms of the patient. This approach aligns with the philosophy of palliative care (J. Bergman, Brook, & Litwin, 2013). For physicians, this paradigm shift is not an easy task, as it challenges the core attitude toward the practice of medicine which is to cure at all costs.

Physicians’ Attitudes Toward Palliative Care

Physicians learn the Hippocratic Oath early in medical school: that in treating a patient, the physician shall *do no harm* (Horowitz, Gramling, & Quill, 2014). This oath is ingrained into physicians from the beginning of their education (Horowitz et al., 2014). It shapes physicians’ attitudes toward being healers. The challenge is that as medical technology has progressed, the idea of doing no harm has become convoluted. Treatments for serious illnesses are fraught with side effects that affect the patient’s quality of life and ultimately do harm (Horowitz et al., 2014). Patients experience severe fatigue, nausea, and other side effects that take away from the quality time they can have with their families. Physicians face the conundrum of aggressive treatments that may extend a patient’s life by days or ceasing treatment and improving quality of life (Horowitz et al., 2014).

Medical schools’ curricula abound with knowledge about diagnosing and treating the patient but lack courses that address palliative care. Horowitz et al. (2014) revealed that although 49% of medical institutes surveyed believed that medical students should learn palliative care principles such as effective pain management and end-of-life care, only 40% of such institutes provided a required course. The authors noted the continued prevalence of outdated and inaccurate attitudes about palliative care (e.g., that it is provided only at end of life). This attitude fosters the belief that physicians have nothing else to provide a patient with a serious illness such as cancer. Additionally, physicians continue to hold the misconception that palliative care hastens death by stopping all curative treatments. The authors argued that this misconception is far distant from the facts about palliative care but that such inaccurate attitudes prevail, nonetheless. The authors encouraged medical schools to incorporate palliative care in existing courses so as not to burden the already demanding curricula. When incorporated into curricula, physicians learn early on about pain management, suffering, and inclusion of psychosocial and spiritual realms that drive the patient's engagement in treatment. Horowitz et al. (2014) also observed that with the inclusion of palliative care principles in the core curriculum, medical students would have the opportunity to address their own countertransference issues with caring for the serous ill. In doing so, physicians would be able to identify the need to continue aggressive treatments, especially in the final months of a patient's life, as driven by their own fears of failure and not what is in the best interest of the patient.

Currently, the maxim of *do no harm* has taken on the meaning that harm equates to not treating the patient to the fullest capacity that medical technology allows (Holmboe & Bernabeo, 2014). In other words, "do no harm" is interpreted as "treat aggressively," regardless of the futility of the treatment (Holmboe & Bernabeo, 2014). Holmboe and Bernabeo (2014) argued that with today's advanced medical technology, a physician must be trained to work within an interdisciplinary team to ensure that the biopsychosocial and spiritual needs of the patient are respected. Holmboe and Bernabeo observed though that medical schools are failing in providing the training necessary for physicians to engage in teamwork, and that medical schools have been slow in integrating the skills that are indispensable for patient-centered care.

Holmboe and Bernabeo (2014) conducted a qualitative study on the interpretation of the Hippocratic Oath in the current environment of the medical needs arising from advanced medical technology. The issue addressed in their study was access to medical care for special populations such as those in poverty or rural areas. The authors maintained that medical schools were obligated to teach students about not only medical technology that can cure a patient but also about the need to address the suffering of the patient. Medical students must be taught to treat the patient holistically. Yet, even with the inclusion of a holistic approach, the focus is still on curing the patient, and viewing anything else as a failure.

The concept of "no harm," in current parlance, continues to means that death is a failure; hence, the physician offers the patient every possibility available in medicine to attack the disease with the hope of a cure (Sibbald, Downar, & Hawryluck, 2007). Sibbald, Downar and Hawryluck (2007) highlighted the problems with this approach, which leads to futile care, especially in ICUs. The authors noted the interrelationship between the expectations of the patient and the physician, as illustrated in cases such as metastatic cancer complicated with pneumonia leading to futile care. In such cases, the patient (or legal spokesperson) demanded implementation of aggressive treatment despite the physician communicating the futility of such treatment. In other words, despite all medical interventions, the patient would die. But the physician lacked the ability to communicate effectively in direct terms, leaving the patient and family members still believing there was a chance of survival. The challenge with this attitude of aggressively treating patients with the full arsenal of medical interventions is that the side effects are often worse than the condition. Sibbald et al. (2007) observed that in such cases, palliative care should have been addressed early in the trajectory of the disease.

Studies have shown that patients are not provided adequate education about the physical and psychological side effects of chemotherapy and radiation (Waller, Forshaw, Bryant, & Mair, 2014). Waller et al. (2014) found in a meta-analysis that in 18 studies with a combined total sample size of 3,443 cancer patients that a majority of them were unaware of the severity of impact side effects would have on their quality of life. These side effects included not only the physical effects such as nausea and fatigue but also psychosocial effects such as anxiety, sexual functioning, and social isolation (Waller et al., 2014). The authors identified one influence was the physicians' inability to communicate effectively the effects of the treatment. Further, physicians lack the knowledge about the impact of the psychosocial effects on the patients' ability to tolerate chemotherapy and radiation. In addition, physicians are not accustomed to discussing the cost of treatments. The focus is on curing the disease, not the financial impact it will have on the patient. Yet, studies have shown that when patients are provided information on the cost of treatments and impact on quality of life, patients choose less aggressive forms of treatment of their conditions (Carlotto, Hogsett, Maiorini, Razulis, & Sonis, 2013; Wright et al., 2016). This situation requires physicians to engage with patients in a matter that is foreign to them (Carlotto et al., 2013). Yet, there is a shift occurring in medicine (Wright et al., 2016).

The current trend in medicine demands the shift from physician-driven care to patient-centered care (Bardes, 2012). Bardes (2012) observed that physician-driven care created a medical system depended upon specialists. When a cure was not evident, the patient would be referred to another physician. Thus, the patient went from physician to physician seeking the answer to pain. In that process, physicians felt confident that they had done their job. But the patient experienced frustration with referral to one physician after another, as well as the related financial hardship incurred. And in that process, the patient's psychosocial and spiritual needs were not heard. Yet, as Bardes noted, the holistic approach can reduce the patient's frustration and be more cost effective.

Patient-centered care fosters a multidisciplinary, holistic approach to treating the patient and the family (Chawla & Davis, 2013). In this approach, not only the physical but the patient's psychosocial and spiritual needs are taken into consideration when developing the medical treatment plan. Although Chawla and Davis (2013) focused on creating a database that fostered algorithms for treating the patient, these algorithms—unlike those in physician-driven care—are inclusive of the biopsychosocial and spiritual needs of the patient. Research has shown that patient-centered, shared decision-making has improved overall quality of life and reduced economic burden for the patient and family (Oshima Lee & Emanuel, 2013). Patient-centered care is dependent upon shared decision-making. Oshima Lee and Emanuel (2013) observed that per the Patient Protection and Affordable Care Act (2010), physicians who do not document shared decision-making risk financial penalties. The authors noted that shared decision-making has resulted in fewer invasive surgical procedures, and approaches that improved quality of life. Patient-centered care is a hallmark of palliative care. Physicians shifting their attitudes from physician-driven to patient-driven care are ultimately improving the overall health of their patients.

Physicians' Behaviors Regarding Palliative Care

Physicians' years of training in clinical pathways that include algorithms of tests, diagnoses, and treatments that cure disease must include patient-centered care that encompasses the patient's physical, psychological, social, and spiritual needs at the time of diagnosis (Wiener, Weaver, Bell, & Sansom-Daly, 2015). Wiener et al. (2015) observed that this was a difficult challenge in that physicians' training that shapes behaviors exposes them to very few hours of palliative care. The authors noted that curative-focused training did not provide physicians the opportunity to value the importance of the inclusion of the patient's psychological, social, and spiritual needs in treating the disease. Such whole-patient focus involves a shift in training to include physicians learning a new way of communicating with the patient inclusive of active, reflective listening to ensure that the patient understands the diagnosis and prognosis (Pantalon et al., 2013). This approach is being ushered in by the demand of the paradigm shift from physician-driven to patient-centered care. Until now, physicians had not been taught the behaviors needed to engage the patient in shared decision-making. But as Pantalon et al. (2013) highlighted, patients have also been unaccustomed to being asked about the type of care they were seeking. This shift has created fear and anxiety among patients. Physicians now need to adjust their behaviors in treating the patient in order to address the psychosocial dynamics that unfold in patient-centered care. Physicians who learn to adapt their behaviors to engage and embrace the patient in the decision-making find that patients who know the prognosis of their conditions make different treatment choices that focus on quality of life (Hackett, Godfrey, & Bennett, 2016). For example, physicians who actively listen to their patients, especially in describing the psychosocial aspects of pain experienced at end stage cancer, for instance, learned that fears of physician abandonment motivated patients to not report the extent of their negative symptoms. This resulted in overall poor symptom management (Hackett et al., 2016). This section discusses the behaviors associated with physician-patient communication, the difficult task of discussing the prognosis, and challenges with pain management.

Communication. The prevailing attitude among physicians is that palliative care is provided only at the end of life (Gidwani et al., 2016). Gidwani et al. (2016) observed that despite recommendations of the Institute of Medicine, the American Society of Clinical Oncology, and the National Comprehensive Cancer Network to refer to palliative care at the time of diagnosis, physicians waited from 180 days to the last week of life to make such referrals. Hui et al. (2013) conducted a literature search on the terms *palliative care, supportive care,* and *hospice care*. The researchers found that in textbooks and dictionaries, there was confusion about the difference between the types of care provided to patients with serious illnesses. Thus, it is understandable that physicians correlate palliative care with hospice care. And since Medicaid hospice is provided when a patient ceases curative care, physicians liken palliative care to giving up hope for a cure (Hui et al., 2013). This attitude prevails despite evidence that early implementation of palliative care improves quality of life, reduces costs, and prolongs survival rates (Irwin et al., 2013; Zimmermann et al., 2014). Irwin et al. (2013) reviewed four studies using randomized control groups that were designed to use the palliative care measures of quality of life at the end of life. The authors found that in studies that included comorbidities, palliative care improved the quality of life but did not increase the quantity of life. The two studies in which the participants had metastatic cancer without comorbidities found that palliative care improved both the quality of life and the quantity of days. Two of the studies cited were the landmark studies in palliative care conducted by Temel et al. (2010) and Temel et al. (2011). Temel et al. (2010) and Temel et al. (2011) found that when palliative care was introduced at the time of diagnosis, patients experienced less psychological distress, preferred less aggressive treatments, and lived up to almost 3 months longer. Irwin et al. (2013) argued that despite the studies' indications that palliative care improved patients' quality and length of life, physicians continued to resist early referral to palliative care. Referring patients to palliative care at the time of diagnosis requires physicians to change behaviors, from communicating only about aggressive treatments and cures, to including palliative care and overall quality of life (T. J. Smith & Hillner, 2011). T. J. Smith and Hilner (2011) noted the struggle physicians face in having such discussions with their patients: a double bind. Although patients expect aggressive treatments, they are not fully aware of the economic burden nor the impact of such treatment on quality of life. An example given to illustrate the cost of treatment was the use of hematopoietic colony-stimulating factors, which average about $3,500 per injection (T. J. Smith & Hillner, 2011). The authors observed that patients were receiving chemotherapy up to only days before death. T. J. Smith and Hilner challenged their colleagues to reset patients' expectations by having frank conversations about the economic and physical impacts of treatments on quality of life. Such frank conversations require physicians to communicate clearly the prognosis, the cost of the treatment, and, most importantly, the impact of treatment on the quality of life.

Communicating prognosis. Despite knowing that palliative care improves the quality of life for someone with a serious illness, physicians do not refer patients to palliative care until the last months of life (Fukui et al., 2011). Fukui et al. (2011) identified factors such as physician-patient relationship and patient-family relationship as key factors in not communicating the prognosis to the patient. In some cases, the family did not want the patient to know that the patient had a life-limiting condition. In other cases, the physician lacked training on communicating the prognosis to patients. Although Fukui et al.'s study was conducted in Japan, and thus cultural issues should be considered, the physician's struggle with communicating hope when there are no more curative options is universal (Bernacki & Block, 2014). And families struggle with the grasping the realities of the health of their loved one (Bernacki & Block, 2014).

Bernacki and Block (2014) identified several reasons for physicians' difficulty in communicating prognoses with their patients. For some physicians, lack of training in handling the emotional responses from the patient was an issue. The potential anxiety and fears expressed by the patient led physicians to avoid such discussions. For other physicians, feeling overwhelmed by the constraints of the medical system that does not allow time for such discussions led them to avoidance. Physicians identified the importance of being direct but clearly stated their inability to conduct such discussions.

Even physicians who did inform patients that they had a life-limiting illness lacked the behavior of checking in with such patients to ensure that the patients understood the seriousness of their conditions (Jackson et al., 2013).

It is a skill to be able to be present with a patient who is attempting to understand the multitude of issues involved with a serious, life-threatening condition. Jackson et al., (2013) exposed physicians’’ unrealistic expectation that patients would comprehend the diagnosis and prognosis in a few visits. The authors discussed how patients ebb and flow in their integration of the seriousness of their conditions. For example, a patient may verbalize in one visit the need to plan for the funeral, yet at the next visit express excitement about a trip in 6 months. Physicians may misinterpret this fluctuation as a failure on their part in effectively communicating. Jackson et al. (2013) observed that such a reaction by a patient may not necessarily be the physician’s fault in communicating the facts but rather a natural process in the prognosis integration that occurs for patients with life-threatening diseases. Physicians must be able to utilize motivational interviewing skills and reflective listening at every appointment to gauge the patient’s comprehension of the condition. A key concern is that such communication techniques take time, time that physicians rarely have at their disposal. Yet physicians who have learned to utilize reflective listening have learned that in the long run it saves time and cost, and improves the patient’s quality of life (Lamont, 2001).

Lamont (2001) observed that physicians held the attitude that discussing a life-limiting prognosis would lead the patient to distrusting the physician’s ability to heal the patient, thus avoiding frank conversations about survival estimates. But as the world population is growing older and medical advancements can lead to costly and futile treatment, both physicians and patients need to have these difficult discussions. Pantalon et al. (2013) observed that physicians struggle with such discussions because they conflict with physician's beneficence. Yet, Pantalon et al. revealed that utilizing motivational interviewing skills, the physician and patient can come to an understanding about the prognosis of the condition. Physicians found that such communication techniques enhanced their understanding of the multifaceted components in a patient's life that shape the patient's perspective on the symptoms, including pain (Pantalon et al., 2013). Thus, these communication skills can forge a sense of teamwork between the physician and patient in creating goals for treatment that address not only the physical needs but also the psychological, social, and spiritual needs of the patient and family.

Pain management. Candid discussions about prognosis and treatment must include addressing the patient's concerns about pain management. Patients with life-threatening illnesses fear the point when pain becomes unbearable. Physicians who struggle with symptom management share this concern (Kirby, Broom, Good, Wootton, & Adams, 2012). Kirby et al. (2012) studied the role of symptom management in the timing of the referral to palliative care. The researchers found that as the patient's discomfort increased, physicians would make the referral to palliative care. But this was often too late for the patient to benefit from the holistic approach provided by palliative care. The late referrals—often at the end of life—did not allow enough time for the palliative care team to work effectively on biopsychosocial and spiritual issues. The researchers encouraged physicians to change such behaviors to early referral to palliative care. Folding that specialization into the treatment team allows the patient to benefit from an interdisciplinary approach to symptom management, thus addressing the patient's fears of pain management. This is significant because research has shown that unrelenting and intractable pain can drive some patients to consider suicide (Javier et al., 2016). Javier et al. (2016) examined the effectiveness of managing cancer pain in six countries in Southeast Asia. Interestingly, the Southeast Asia conditions in Javier et al.'s research mirror similar conditions that are found in Alaska, such as the scarcity of pain medication in rural and remote areas, the shortage of physicians in rural areas, and physicians in both urban and rural areas having insufficient training in effective pain management for cancer patients (Doorenbos et al., 2011).

In addition to the lack of availability of medications and training, Javier et al. (2016) addressed physicians' unfounded fears that patients with metastatic cancer may become addicted to the opioids commonly used to treat their pain. Despite these findings, physicians undertreat pain in fear of patient addiction to pain medications (Davis & Carr, 2016). Davis and Carr (2016) highlighted the lack of education physicians obtain about proper use of opioids. The researchers provided an example that veterinarians receive more training on pain management than do physicians in medical school. In addition to the lack of training, pharmaceutical companies have been charged with misrepresenting the fact that opioid use can become addictive, resulting in a national epidemic of opioid abuse (Garcia, 2013). Unfortunately, those who have chronic pain and pain related to cancer are experiencing a backlash of legislative governance of opioid prescriptions. Such governance has caused physicians, and especially primary care providers, to fear legal consequences, leading to undertreatment of patients who have medical conditions requiring pain management (Garcia, 2013). Interestingly, research does not support the premise that a patient will become addicted to pain medication when properly prescribed and the patient’s pain is under control (Mojapelo, Usher, & Mills, 2016). In fact, in a review of 17 studies that involved of over 88,000 patients, researchers found no correlation between appropriate use of opioids and addiction (Minozzi, Amato, & Davoli, 2013). Minozzi et al. (2013) noted that researchers in 26 studies found that pain was being poorly managed for 50% of cancer patients. Physicians’ behaviors regarding pain management have swung from overprescribing to underprescribing pain medications. Minozzi et al. (2013) emphasized that there was little discernment of the type of pain, such as in malignant disease. This ultimately results in cancer patients suffering needlessly.

The WHO (n.d.b) and Centers for Disease Control and Prevention (CDC, n.d.) established guidelines for the management of pain associated with cancer (Caraceni et al., 2013; Dowell, Haegerich, & Chou, 2016). Nevertheless, physicians’ behaviors of undertreating pain persist, with serious consequences for the patient’s quality of life (Luckett et al., 2013). Luckett et al. (2013) conducted a review of 70 qualitative studies on cancer pain. They found that despite the guidelines for managing cancer patients’ pain, up to 75% of patients reported experiencing pain; of that population, up 30% experienced severe pain. The researchers found physicians’ concerns about possible addiction to opioids and lack of knowledge about nonpharmacological management techniques to be the leading reasons for undertreating pain in cancer patients. Yet, as physicians struggle with these issues, patients needlessly experienced intractable pain.

Another reason for physicians’ behavior of undertreating pain includes strict system management of pain medication that includes legal consequences (Kwon et al., 2013). Physicians need to realize that the opioid restrictions do not apply to cancer patients. The early utilization of palliative care can assist physicians in effectively treating their patients’ symptoms (WHO, 2014). In fact, the holistic approach to palliative care for pain results in better symptom management and less opiate use by the patient (Kwon et al., 2013). Kwon et al. (2013) study of 196 patients found that with the inclusion of palliative care with the patient’s other specialists, patients reported improved quality of life on the Barriers Questionnaire II (BQ-II). One of the factors identified in Kwon et al.’s study was that palliative care specialists focused solely on the physical, psychosocial, and spiritual issues associated with the cancer. This differs from the other specialists, such as oncologists, who focus on curative treatments. Another factor Kwon et al. identified is the multidisciplinary approach used in palliative care. The physician can address the physical issues while other team members focus on the psychosocial and spiritual needs of the patient. Thus again, early integration palliative care can improve quality of life (Le et al., 2014). Le et al. (2014) found that despite the overwhelming evidence of benefits from early referral to palliative care, physicians continue to delay referral due to a number of concerns. One such concern was the attitude that palliative care is only for complex cases; similarly, another attitude identified in the study was the use of palliative care only with treatments such as chemotherapy or radiation to reduce the tumor or symptom management. Le et al.'s study illuminated physicians' practice that even though they utilized palliative treatments, they would not refer patients to palliative care because they did not want patients to give up hope. Their study revealed that patients often do not understand that palliative chemotherapy and/or radiation is not curative. Although not quite deceptive in nature, physicians, in the misguided attempt to give hope to their patients with metastatic cancer, were depriving them of an opportunity for care that has been found to increase not only quality of life but also the quantity of life (Le et al., 2014).

In summary, physicians need to shift their paradigm from aggressive treatment to patient-centered care that includes the patient's wishes in treating serious illnesses (Jenkins, 2015). Jenkins' (2015) qualitative study revealed that this shift must begin at the outset of physicians' education. The author explored the challenges faced by residents in caring for critically ill patients in the hospital. Jenkins observed that residents were placed in charge of patients. This means that the resident, with little or no training, presented treatment options to the patient. With little guidance from physicians, the residents struggled with attempting to explain to terminally ill patients the complexities of do-not-resuscitate/do-not-intubate (DNR/DNI) instructions, leading to patients choosing aggressive treatments (Jenkins, 2015). Regardless of whether in the hospital or in the clinic, physicians must re-examine the paradigm of aggressive cancer treatment, especially with metastatic cancer. As physicians embrace patient-centered care and utilization of motivational interviewing, they will find that patients are more concerned with greater quality of life than with living longer with debilitating side effects from aggressive treatments (Jenkins, 2015).

This evaluation of the literature demonstrates that physicians’ crusade for curing the disease often overshadows the patient’s desire to live a quality of life with proper pain management. The next section further illuminates the challenges faced by physicians when treating the leading serious illness, cancer.

Cancer

Cancer patients can benefit the most from palliative care (Zimmerman et al., 2014). Zimmerman et al. (2014) conducted a randomized control-group study to determine the effectiveness of early implementation of palliative care. The domains studied were the patient’s physical, psychological, social, and spiritual aspects of life. The studied revealed that patients in the last 3 months of life reap little to no benefit from palliative care. But the revealed a significant increase in quality of life when introduced at 4 months (Zimmerman et al., 2014). Thus, early implementation of palliative care has proven to improve the quality of life of those experiencing cancer (Meier & Brawley, 2011).

Meier and Brawley (2011) noted that cancer is becoming more of a chronic condition, whereas in the past it was more of a terminal disease. They presented a case of a young woman with leukemia who was being undermedicated. Her request for pain medication had been labeled as drug-seeking. The palliative team was consulted, and addressed the physical, psychological, social, and spiritual domains of this young woman’s experience of cancer. As a result, the woman underwent treatment with her symptoms well managed. Six years later, she was finishing college and doing well. This case demonstrated that palliative care is for not only those with malignant cancer or other terminal diseases. Meier and Brawley drew attention to the need for physicians to adjust their attitudes and behaviors toward palliative care to ensure that early implementation at the time of diagnosis occurs on a regular basis. This is significant because estimated new diagnoses of cancer are expected to rise by 70% worldwide (WHO, n.d.a). In the US, cancer death rates have declined over the past decades (Siegel, Miller, & Jemal, 2015). The reduction was attributed to early detection and availability treatments in the US (Siegel et al., 2015). Despite the overall decrease in cancer death rates in the US, Alaska has the highest per capita incidence rate of cancer in the US (Jemal et al., 2011). Those living in rural and remote Alaska are represented disproportionately in the statistics, ranking first in the US for cancer cases (U.S. Department of Health & Human Services, n.d.). Alaska Natives represented the largest ethnic group in rural and remote Alaska. One study showed the mortality rate of Alaska Natives at 243 per 100,000, versus the U.S. rate of 193 per 100,000 (Day, Provost, & Lanier, 2009). One reason for this disparity is the lack of medical resources in rural Alaska, resulting in difficulties with early detection and medical intervention (Roubidoux, 2012). Another reason for the disparity that impacts the way cancer is treated is the language of cancer and the costs related to treating cancer.

Metaphors for cancer. The metaphor used with cancer is being at war with the disease (Ellis et al., 2015). The war metaphor began back in the early 1970s when President Nixon called for a “war on cancer” (p. 13). Since then, both physicians and patients have approached the disease of cancer as something that can be conquered. But this war has casualties, such poor quality of life and severe socoeconmic consquences.

The war metaphor promotes the idea that when one dies of cancer, he or she has not only lost the battle but has failed. Ellis et al. (2015) noted that the stigma of this metaphor negates the enomorous courage a cancer patient undergoing toxic treatments and surgeries to survive one more day. The authors illustrated the misnomer of this metaphor, asking why we do not use the metaphor for heart disease or car accidents. There simply is no other disease for which the war metaphor is used, thus implying that one has lost the battle when one dies.

This stigma of the war metaphor impacts not only the patient and family but influences physicians as well. Ellis et al. (2015) argued that this approach underpinned chemotherapy treatment of patients with metastatic cancer up to the last few weeks of life. Physicians, especially oncologists, desperately want their patients to win the battle. Both physician and patient interpret anything other than aggressive treatment as giving up hope. Thus, physicians presenting the diagnosis inform their patients that they have cancer and that together they will fight it (Ellis et al., 2015).

Appleton and Flynn (2014) conducted a qualitative study on the use of the metaphors for patients who had completed cancer treatments. Some study participants expressed frustration with the language used to label them, such as *survivor*. Those participants explained that such language separated them from the rest of the world as being different. Other participants expressed their survival in the battle as a source of pride, that they had made it through the battle and won. Uniformly, the participants wanted to let go of the word *patient*. They wanted to create a life that was free from physicians, clinic appointments, and the dreaded side effects of the treatments (Appleton & Flynn, 2014).

The metaphors associated with cancer shape both the physician's and patient's experience of this disease. The metaphors carry a strong connotation of destroying the disease. Any other language, such as discussing palliative care, implies there is no hope. This attitude also influences the degree of aggressive, costly treatment implemented in the last few months of life (Wright et al., 2016).

Economics of cancer. The costs of cancer are substantial, creating economic burden, at times to the point of influencing treatment decisions. Cancer's direct and indirect costs, as well as additional costs of cancer for Alaskans, are examined here. Research has shown that palliative care can reduce the economic burdens of serious illness (S. Smith, Brick, O'Hara, & Normand, 2014), also examined below.

Direct costs of cancer. Diagnoses of cancer have increased 38% globally since 1990, mostly due to the prevalence of aging of the world's population (Torre et al., 2015). In 2012, approximately there were 14 million new diagnoses of cancer worldwide. Parallel to the increase in diagnoses is a growing arsenal of medical treatments that allow patients to live longer. The medical advancements come with the inflation of medical expenses for patients and their families. For example, Yabroff, Lund, Kepka, and Mariotto (2011) noted that new targeted cancer therapies can range from $9,000 to $34,000 per month. The authors observed that there are two peak times for high costs: at the time of diagnosis and during the last year of life. Despite progress in reducing the use of hospitalizations, including ICUs, in the last 3 months of life, the economic burden of cancer still has a devastating effect for the patient and families (Gozalo, Plotzke, Mor, Miller, & Teno, 2015). One study of 28,530 patients showed that total cost of care in the last 6 months of life, including inpatient and outpatient care, ranged from $75,000 to $113,000 (Chastek et al., 2012). The economic burdens on the family have led to bankruptcies (Essue et al., 2015; Kim, Yoon, & Zurlo, 2012). Kim et al. (2012) observed that the economic shock of medical costs for middle aged and elderly people with chronic health issues—not only treatments but also visits to physicians and hospitalizations to treat side effects—increased unsecured debt by 48%. Essue et al. (2015) observed that 150 million people worldwide experience financial hardship due to payments toward healthcare. Further, they noted that in the US, 62% of bankruptcies were related to medical debt. Despite insurance, Essue et al. found in a mixed method study that patients with serious illnesses had high out-of-pocket expenses that significantly impacted their quality of life. Thus, the economic costs of cancer are extraordinarily high, and do not include the hidden, indirect costs of cancer, such as loss of income and impact on the family.

Indirect costs of cancer. In addition to medical costs, cancer involves indirect costs such as loss of productivity, quality of life, and premature death (Whitney et al., 2015). In economic terms, indirect costs are measured in terms of human capital and willingness to pay (Yabroff et al., 2011). The costs of human capital and willingness to pay begin to add up from the time of diagnosis. The patient begins to lose time at work for doctor appointments, treatments, and hospitalizations. This is addition to loss of productivity related to treatment side effects such as fatigue and nausea. As the disease progresses, the patient may need to quit work altogether. Such patients' quality of life is impacted by the experience of the loss of their profession. This loss can have a profound impact for those whose identities are tied to their profession. Loss of self-worth and self-esteem take their toll on the patient and the family. The patient also experiences social isolation as friends and family fade away in fear of not knowing what to do or how to help (Yabroff et al., 2011). These psychosocial impacts of the disease ultimately affect the quality of life. And the ultimate impact on human capital is premature death.

Other indirect costs include the impact on the caregiver. Caregivers experience not only economic burdens related to sick leave from work, but also socioeconomic stressors such as isolation from friends and family, along with decreases in their own health (McCaffrey, Cassel, & Coast, 2015). As the disease progresses, the caregiver's world narrows, finding life wrapped around caring for the patient. This involves driving the patient to and from doctor appointments and tending to side effects such as nausea and diarrhea. In addition, there is the shift of roles in the relationship (Northouse, Williams, Given, & McCorkle, 2012). For a married couple, this shift involves shared responsibility for care of not only the patient but also household chores and children. There is also the loss of being a couple. The lover becomes the nurse. To compound these losses, family members' and friends' withdrawal from the caregiver as well as the patient add to loneliness (Northouse et al., 2012). Throughout all of this, the caregiver experiences anxiety in anticipation of living without the loved one.

Additional costs for Alaskans. In addition to the direct and indirect costs mentioned above, Alaskans with cancer face additional costs such as traveling from the villages to get treatments (Driscoll, Dotterrer, Miller, & Voorhees, 2010). Airfare cost can range from several hundred to thousands of dollars per trip (Kokesh, Ferguson, & Patricoski, 2004). Depending on medical condition, this can mean living away from home for four to six times a year for several weeks at a time. The caregiver may also travel with the patient. Insurance covers some of the costs, but out-of-pocket costs can put significant financial strain on families who already live below the poverty level (Bauer & Plescia, 2014). Furthermore, regardless of whether living in urban or rural areas, some medical treatments are not available in the state. Those patients must fly to the lower 48 states for treatment.

The indirect costs of cancer for Alaskans include loss of productivity due to subsistence needs such as hunting and gathering to provide food throughout the winter (Martin, 2015). In addition, as mentioned, the caregiver may travel with the patient. This may result in loss of income from the caregiver's job. If children are involved, there is the additional strain of finding childcare (Daneault et al., 2003). There is also a significant loss of social support, especially for rural patients who have to remain in the city for their health care.

Palliative care impacts on the costs of cancer. Research has shown that palliative care can reduce the economic burdens of serious illness through reduced usage of emergency rooms, ICUs, and hospitalizations (S. Smith et al., 2014). Although this literature review blends the term *palliative care* and *hospice*, the findings indicated that the use of palliative care lowers the overall cost of care for patients. S. Smith et al. (2014) explored the impact of the philosophy of palliative care, such as how attending to the psychosocial and spiritual aspects of the patient reduced use of medical interventions. Further palliative care-related cost reductions were evident through utilization of less aggressive and costly medical interventions in the last year of life (S. Smith et al., 2014).

Researchers have found that patients who knew the cost of care, along with its debilitating effects, made decisions that decreased the economic burden on themselves and their families (Wright et al., 2016). In a study of 1,146 patients with cancer, Wright et al. (2016) found that family members reported excellent end-of-life care when the patient chose to be admitted to palliative care or hospice. The authors measured the differences between aggressive care in the final weeks of life (as defined by chemotherapy and hospitalizations) compared to those who were given the opportunity to die at home utilizing palliative care and hospice. The study validated prior studies in which patients and family members reported significantly improved quality of life and excellent end-of-life care when palliative care was used in a timely manner. The cost of palliative care and/or hospice leaves much less of a burden on family members. Wright et al. stressed that the significance of such studies should encourage physicians to have discussions about cost of care and options. But physicians balked at discussions about the cost of care because they felt it took away hope from the patient (Coulourides Kogan, Penido, & Enguidanos, 2015). In a qualitative study of seriously ill patients, Coulourides Kogan et al. (2015) found that, given the information about the diagnosis, prognosis, and cost of care, patients experienced a different type of hope—the hope to make adjustments in their lives that focused on matters other than finding a cure. Hope is redefined, freeing the patient from the physical, psychological, social, and spiritual strains that seeking cures creates. Patients are allowed to adjust to a new reality. The patient feels more in control of the decision-making process (Bakitas, Kryworuchko, Matlock, & Volandes, 2011). Bakitas et al. (2011) found that patients utilizing palliative care experienced more opportunities for shared decision-making with their physicians. As a result, such decision-making about care led to clarity about end-of-life choices and improved overall quality of life. For Alaskans, this means having the choice to stop treatments and go home to their villages (DeCourtney, 2010; DeCourtney, Branch, & Morgan 2010). Going home means being surrounded by friends and family who speak their language, sharing Native foods, and resting without the stressors that come from being many miles away in strange lands.

In summary, the epoch-making serious illness today is cancer. As discussed above, cancer has a catastrophic impact on the patient and family, especially for Alaskans who face exceptionally difficult decisions that have an impact on physical, psychological, social, and spiritual well-being. This dissertation study informs the gap in knowledge about the differences between Alaskan physicians practicing in urban and rural areas. This study also illuminates the knowledge, attitudes, and behaviors of physicians as they begin to address the need to integrate palliative care into their practices.

Palliative Care

Palliative care is a specialization in medicine that treats the physical, psychological, social, and spiritual needs of individuals who have a serious illness

(Schaefer et al., 2014). Physicians are well versed in diagnosing and treating the physical manifestations of a disease. Yet most physicians lack the ability to recognize the impacts of the psychological, social, and spiritual realms on the patient’s prognosis. The principles of palliative care encompass the view that addressing not only the physical but also the psychosocial and spiritual realms of the patient improves the patient’s quality of life. Palliative care is an interdisciplinary, holistic approach which, when introduced in the early stages of a disease, improves quality of life (Gómez-Batiste et al., 2014).

Gómez-Batiste et al. (2014) highlighted the prevailing attitude that palliative care is end-of-life care. Gomez-Batiste et al. noted that unfortunately, this misconception deprives patients with serious, chronic illnesses access to palliative care. Gómez-Batiste et al. conducted a cross-sectional, population-based study on the prevalence of patients with chronic conditions that involve a life-limiting prognosis but do not yet meet the current diagnostic standards used by physicians for referral to palliative care. Their study was a demonstration project that introduced a new tool to assess palliative care needs such as functional assessment, loss of daily activities, nutritional changes, increase use of primary care, and emotional distress. When using these diagnostic criteria in contrast to the usual end-of-life scales that use primarily blood results, the authors found a significant increase in those patients with chronic, serious illnesses, not just the terminally ill, who would benefit from palliative care. Yet, it has been challenging to engage physicians into incorporating the principles of palliative care into their practices because of the attitude that palliative care is used only when all curative treatments fail (Case, Orrange, & Weissman, 2013; Cooper et al., 2010). Much of the prevalence of this attitude is due to physicians’ lack of exposure to palliative care in their training. Case et al. (2013) observed in their literature review that many medical schools do not include palliative care in their curricula. Another obstacle Case et al. found was the lack of residencies available in palliative care. Case et al. also found that the palliative care specialty is considered a soft discipline, thus not garnering medical schools’ attentiveness to build it into curricula. Considering the global trend of an elderly population whose health needs put increasing demands on the medical system, this attitude is self-defeating. Evidence shows that palliative care, when implemented at the time of diagnosis, has been proven to increase the quality and duration of life (Irwin et al., 2013; Tan et al., 2012).

Irwin et al. (2013) found that providing a team approach that incorporates shared decision-making and education about the condition at the time of diagnosis led to the patients making decisions that increased survival rate. Irwin et al. conducted their study with patients with metastatic nonsmall-cell lung cancer. The authors challenged the attitude that palliative care hastens death when the patient decides not to pursue chemotherapy but instead decides to focus on quality of life. The authors stressed that early integration of palliative care into overall care of the patient allows the patient to address physical, psychological, sociocultural, spiritual, and in some cases ethical and legal concerns, thus improving quality of life. This integrated care is provided through an interdisciplinary team that encourages active patient and family involvement in the treatment plan. Patients experience an understanding of their disease and thus are able to make informed decisions about treatments. Irwin et al. found that with this increased knowledge and understanding of the disease, patients reported less depression and overall angst.

This finding by Irwin et al. (2013) is contrary to conventional wisdom which had held that if a patient understood the seriousness of the condition, the patient would be more depressed. Irwin et al. stressed that the patient benefits most when palliative care is introduced concurrent with curative treatment. The philosophy of palliative care holds that the patient has a specialized team to address physical distress, pain management, and the psychosocial and spiritual needs that arise during curative treatment. Such a holistic approach was found to be significant in a secondary analysis of a randomized trial of patients who received palliative care at the time of diagnosis of their disease (Tan et al., 2012). Tan et al. (2012) found that of 151 patients, 16% were alive at the 18-month follow-up. This contrasted with only 6% in the standard care group. Clearly, early implementation of palliative care for patients with serious illness improves the quality of life and increases survival rates. Yet physicians have continued to resist the idea of inclusion of palliative care for their patients (Tan et al., 2012).

In general, physicians lack the knowledge to manage a serious illness (Beccaro et al., 2013). Beccaro et al. (2013) surveyed Italian primary care providers about their knowledge, opinions, and activities of palliative care. The authors studied primary care providers because they are the ones who have a long-term relationship with their patients, in contrast with specialists. They found that the primary care physicians lacked understanding of the definition of palliative care. In addition, the primary care physicians reported lack of education on the use of opioids for those with cancer, despite the WHO’s (n.d.b) analgesic ladder (Beccaro et al., 2013). The primary care physicians' lack of knowledge of pain management is significant in that cancer pain can become intractable and severely affect patients and their caregivers. Beccaro et al.'s study illuminated the challenges physicians experience in working with patients with serious illnesses who would benefit from palliative care.

The difficulties of dealing with serious illnesses date back to the Grecian era of Hippocrates, when physicians were trained to be healers who do no harm (Holmboe & Bernabeo, 2014). Holmboe and Bernabeo (2014) noted that even with its extant revision, the Hippocratic oath had become outdated with the advent of medical advancements and patient-centered care. The oath's principles rely on the premises that (a) physicians, through their training, have not only a calling to heal; but also that (b) only the physician, not the patient, has the knowlegde and skills to heal. Furthermore, physicians are trained to view the patient as vulnerable and perhaps unable to make the proper decisions. Although the oath does stress that the physician must practice with self-effacement and beneficence, the physician is placed in a double bind of having unique training to heal and yet respecting the patient's own knowledge and attitudes toward treating serious illnesses.

The Hippocratic oath physicians take inherently creates an attitude that not pursuring aggressive treatments does harm to the patient. Yet, unlike the days of Hippocrates, and even up to the 1960s, physicians now have an arsenal of weapons against diseases that were once a death sentence (Hanahan, 2014). Hanahan (2014) noted that the war against cancer is one example of diseases that have benefited from such weapons, but that, alas, the battle is far from being won. This arsenal of weapons, however, has provided the opportunity for physicians to prolong life beyond the point of a natural death (Howie & Peppercorn, 2013).

Howie and Peppercorn (2013) argued that such opportunities for prolonged life come at a high price for the patient. Physicians eagerly embrace each new chemotherapy or radiation technique as an opportunity to provide their patients with a longer life—even if only days longer. The physician feels accomplishment in keeping patients alive. The downfall for the patient is debilating side effects that impact the quality of life. Howie and Peppercorn stressed the importance of physicians' communicating the prognosis with their patients—communicating the reality of the limitations of cancer treatments. Doing so also means that physicians must face their own feelings of failing the patient if unable to provide a cure. Inability to cure means the patient will die, and death is failure (Groopman, 2008). Groopman (2008) asserted that it is in the very nature of the physician's training that not curing is a failure, despite the fact that death is a natural phenomonon. Therefore, in the mind of most physicians, the recommendation of palliative care is equivant to giving up hope.

Hope. Physicians face a conundrum when working with a patient with a serious illness: The physician is trained to cure disease, yet not all diseases are curable. When faced with giving bad news to the patient, physicians often avoid discussing prognosis and focus on treatments (Schaepe, 2011). The justification in doing so is that patients do not want to hear the truth about a life-limiting condition. But the reality is that physicians struggle with the concept of hope. There has been a belief that being forthright about the prognosis takes away the patient’s hope (Schaepe, 2011)

Saunders (1959) challenged the conventional wisdom that patients would lose hope if they knew the seriousness of their disease. Saunders (1981b) and colleagues (Sauders et al., 1995) argued that withholding the diagnoses from patients takes away the patients' right for acceptance of and peace with the ending of their lives. Yet often, physicians' attitudes remain that a referral to palliative care is giving up hope (Lakdawalla et al., 2012). But this attitude is contrary to the evidence that palliative care enhances the quality of life as the patient pursues the curative treatments (Schulman-Green, Ercolano, Jeon, & Dixon, 2012). No longer does the physician have to choose between truth and hope (Olsman, Willems, & Leget, 2016).

Olsman et al. (2016), in their medical ethics study on palliative care, demonstrated that inclusion of palliative care at the time of diagnosis empowers the patient and family in shared decision-making about treatment and when to cease treatment. In turn, this shared decision-making eases the internalized struggle experienced by the physician when needing to give a diagnosis of a serious illness. Early referrals to palliative care empower both the physician and the patient by incorporating a holistic approach to the complexities that come from treating serious illnesses such as cancer. Understanding the components of palliative care and how it complements curative treatment empowers physicians to introduce it at the time of the diagnosis (Gaertner, Weingärtner, Wolf, & Voltz, 2013). Inclusion of palliative care enables the physician to give another type of hope to the patient and family facing the journey of a serious illness. This redefinition of hope encompasses open, direct, and effective address of the patient's physical, psychological, social, and spiritual needs. Accordingly, the patient is assured that all of the symptoms, including physical pain, will be adequately managed (Hendriksen et al., 2014).

Physical symptoms. Patients with serious illnesses, especially cancer patients, fear that their physical pain will not be treated adequately (Hendriksen et al., 2014). These fears are valid; at least 70% of patients with cancer experience moderate to severe pain that impacts the quality of life (Fainsinger, Nekolaichuk, & Muller, 2014). Fainsinger et al. (2014) noted several issues involved in pain management. The researchers argued for a revised tool to measure cancer pain that captures the pain mechanism, incidence of pain, psychological distress, addictive behavior, and cognitive functioning. Although Fainsinger et al. addressed the multifaceted components that compound the patient’s experience of pain, physical manifestation of pain is very real for patients. This is evident in one study of 3,023 cancer patients, of whom 67% experienced pain; within that group, 33% reported their pain being undermanaged (Fisch et al., 2012). Despite pain management being part of physicians’ education, 76% of physicians reported they lacked the knowledge of effective pain management for those with serious illnesses, especially cancer pain (Gannon, Qaseem, Snow, & Snooks, 2011).

Pain. It is the nature of a serious illness to cause physical pain. For example, for those with chronic obstructive pulmonary disease (COPD), constant tightness in the chest and gasping for air limit the patient’s ability to participate in daily activities (Jennings, 2011). Another illustration of the physical pain experienced is those diagnosed with bone cancer or cancer that has metastasized to the bone; such patients experience neuropathic pain as the tumors press against the nerve endings (Jimenez-Andrade et al., 2010; Mantyh, 2013; von Moos et al., 2013). This type of pain is often intractable. In yet another illustration, AIDS patients experience a variety of diseases associated with the syndrome that cause pain which negatively impacts their overall quality of life (Merlin et al., 2014). Physicians attempt to address these symptoms through surgery, chemotherapy, and radiation to remove or reduce tumors. In doing so, the patient may experience a decrease in symptoms but not without side effects.

Side effects of surgery. Surgery is an aggressive form of treatment designed to remove or reduce the source of the disease. The hope is that by conducting the surgery; the patient will experience less physical discomfort. However, the side effects of such procedures can negatively influence the overall quality of life. For example, side effects of prostate surgery can impact urinary control, bowel control, and sexual function (Badr & Carmack Taylor, 2009; Beck, Robinson, & Carlson, 2009; Chen, Clark, & Talcott, 2009). Mastectomy is an effective surgical procedure for removing cancerous tumors from the breast and surrounding areas, and the most common surgical procedure for breast cancer. As a result, the damage to the intercostobrachial nerve and soft tissue that occurs in this procedure causes patients chronic pain (Dragun, Huang, Tucker, & Spanos, 2012; Heim, Valach, & Schaffner, 1997). Although these procedures may prolong life, the side effects have a negative impact on the patient's quality of life. Both physicians and patients weigh the pros and cons of surgery as a treatment for cancer. After surgery, the next line of defense is chemotherapy and radiation.

Side effects of chemotherapy and radiation. Chemotherapy and radiation are treatments designed to poison or burn the tumor and infected areas around the tumor to kill the cancer cells (DeVita & Chu, 2008; Tamarat, 2014). The side effects include mouth sores, balding, loss of appetite, skin irritations, fatigue, nausea, sexual dysfunction, and infertility, to name a few (Damast et al., 2012; Helgason, Fredrikson, Adolfsson, & Steineck, 1995; Sanchez-Barcelo, Mediavilla, Alonso-Gonzalez, & Reiter, 2012; Weeks et al., 2012). Of all of the side effects, patients complain about nausea and fatigue as the ones that impact their overall quality of life (Farrell, Brearley, Pilling, & Molassiotis, 2012; Lundh Hagelin, 2008).

Physicians can prescribe opioid analgesics and psychostimulants to address the pain and fatigue. Nevertheless, physicians are hesitant to prescribe such drugs in fear that the patient may become addicted to them. Laws increasingly inhibit physicians from prescribing the appropriate amounts that patients need for symptom management (Fields, 2011; Garcia, 2013). Physicians know that effective pain management is key to patients' treatment compliance and overall quality of life, but the threat of sanctions on their licenses leads to undermedication (Berger, 2013). In turn, undermedication leads to patients experiencing psychological suffering from the pain (Munglani & Bhaskar, 2015). Such suffering leads to patients feeling helpless and hopeless in managing daily living (Munglani & Bhaskar, 2015). Such suffering elucidates the need to address the patient's psychological well-being.

Psychological issues. Patients with a serious illness are vulnerable to experiencing psychological distress. The *Diagnostic and Statistical Manual of Mental*

Disorders (5th ed.; American Psychiatric Association, 2013) identifies patterns of behavior that influence a patient's ability to cope with the diagnosis of a serious illness. This section explores those influences—such as suffering, anxiety, and depression—on the patient's experience of pain.

Suffering. Suffering is an emotional state comprising a constellation of depressive, anxious, and existential anguish that, when left untreated, exacerbates physical pain (Krikorian, Limonero, & Corey, 2013; Munglani & Bhaskar, 2015). Krikorian et al. conducted a literature review in search of objective tools to measure suffering in cancer patients. Although some were found, adequate assessment of the extent of the emotional state of suffering that impacts the patient's perception of physical pain remains difficult. Yet, this challenge should not be interpreted as meaning that suffering is not a valid form of pain. Munglani and Bhaskar observed that suffering leads to severe, uncontrolled pain in patients with metastatic cancer. For example, a quantitative, longitudinal study of radiotherapy patients who had head and neck cancer demonstrated that patients experienced far more suffering from the treatments than actual physical pain (Schaller, Larsson, Lindblad, & Liedberg, 2015). Schaller et al. noted that the International Association for the Study of Pain (2013) defined *pain* as an uncomfortable sensation that includes both physical sensation and emotional associations to actual tissue damage. Hence, pain is both physical and psychological in nature. The results of Schaller et al.'s study indicated that *suffering* encompasses depressive symptoms, feelings of doubt, thoughts of dying, yearning for a future that might not exist, and longing to not be sick. This psychological state distorts the intensity of the condition and casts a cloud over the patient such that he or she may make counterproductive medical decisions. For example, patients experiencing suffering perceive physical symptoms so severe that they may stop treatment prematurely (Schaller et al., 2015; Sun & Krouse, 2014). Sun and Krouse addressed the benefits in palliative surgery, such as repairing bowel obstruction or tumor-related bleeding. Such surgical procedures can improve the patient’s quality of life but do not address underlying psychological and social distress that manifests in the suffering of the patient. Sun and Krouse stressed that suffering must be addressed for the patient to benefit from physical palliative care treatments such as surgery, chemotherapy, or radiation. But patients’ feelings of fear and being overwhelmed drive decisions not to treat. Physicians who do not understand the interplay between suffering and the physical manifestations of the illness risk alienating the patient (Munglani & Bhaskar, 2015).

Munglani and Bhaskar (2015) noted this alienation may occur when the patient reports being in pain, yet the physician does not see any physical rationale for such pain. The patient may feel discounted. As a result, the patient is undertreated, not necessarily by opiates but by under addressed psychosocial and spiritual needs. Thus, suffering impacts the patient’s perception of pain such that the patient reports a higher level of physical pain (Krikorian et al., 2013). The physician untrained in the interplay between the psychological and physical experience of pain attempts to treat the physical pain. However, the patient continues to experience pain because the source of the pain, the suffering, is not addressed. This dynamic creates conflict between the patient and the physician (A. A. Bergman, Matthias, Coffing, & Krebs, 2013). A. A. Bergman et al.

identified that a power struggle occurs between the patient and physician when pain and suffering go untreated. The patient risks being labeled as a drug seeker. Once so labeled, the patient will have difficulty in achieving adequate control of the physical pain (Bernhofer & Sorrell, 2015). Bernhofer and Sorrell acknowledged that the struggle between medical provider and patient in managing pain can lead to moral distress. The physician wants to reduce the patient's distress but struggles with a multitude of issues. Fields (2011) observed that physicians' struggles with legal oversight of opiates and managing patients' pain often result in the undermanagement of pain. This cycle leads to the patients experiencing depression and anxiety.

Depression and anxiety. Suffering is only one aspect of the psychological issues' patients face with a serious illness. For the physician, the diagnostic process and succession of treatment protocols are part of business as usual. But for the patient, diagnosis and treatment comprise a new level, an inner world of existential angst such as fears of the future, fears of being a burden, and financial concerns that lead to depression and anxiety (Boston, Bruce, & Schreiber, 2011). The patient attempts to adjust to the meaning of the diagnosis in his or her life. All of the factors become overwhelming and can lead to depressive symptoms of sadness, despair, insomnia, hypersomnia, loss of interest, dread, panic attacks, and generalized fear, which gravely influence the patient's quality of life, especially if left untreated (Lie et al., 2015).

Untreated depression and anxiety increase the patient's perception of physical pain (Brush, 2012; Hickey et al., 2011; Montesi et al., 2013). Physicians not adequately trained in palliative care are vulnerable to misunderstanding the patient's reports of pain, leading to either undermanaged pain or labeling the patient has drug seeking (Akashi et al., 2012; Underwood, 2011). In turn, the patient experiences more despair due to not only the uncontrolled physical pain, but also the unaddressed underlying psychological issues (Jackson et al., 2013; McCabe, Mellor, Davison, Hallford, & Goldhammer, 2012; Pirl et al., 2012) This downward spiral puts the patient at risk for suicidal ideation.

Suicidal ideation. Patients with serious illness whose physical and psychological pain are undertreated are at higher risk for suicidal ideation (Anguiano, Mayer, Piven, & Rosenstein, 2012). A study of 8,089 patients with serious illnesses indicated that these patients were twice as likely as the general public to attempt suicide (Goodwin et al., 2003). Anguiano et al. noted that rate of suicide for cancer patients was twice the rate in the general population. Anguiano et al. conducted a literature review that exposed how patients were at significantly higher risk for suicide within the first year of diagnosis. These studies reinforce understanding of the vulnerability of patients with serious illnesses to desperate thoughts aimed at relieving both physical and psychological pain and suffering.

Physicians need inquire about the warning signs of suicidal ideation, such as not sleeping well, not enjoying activities, experiencing a lack of appetite, and fatigue, as they are clues that the patient is at risk for depression and suicidal ideation (T. V. Johnson, Garlow, Brawley, & Master, 2012). T. V. Johnson et al. (2012) conducted a review of the *Surveillance, Epidemiology, and End Results Program* (National Institutes of Health, n.d.) database from the period of 1973 to 2005 (T. V. Johnson et al., 2012). The cohort consisted of over 3.5 million patients. Of those patients, 0.2% committed suicide following diagnosis of cancer. Of that population, 36% committed suicide within the first year after diagnosis. Factors that increased the risk for suicide were health and mental health comorbidities.

T. V. Johnson et al. (2012) identified several reasons why patients might not be screened by physicians for suicidal ideation. During this critical time at risk for suicidal behavior, it is common for patients to be transferred from primary care providers to specialists (T. V. Johnson et al., 2012) who are strangers to them. Another factor is the lack of time both primary care providers and specialists have allotted to their visits (T. V. Johnson et al., 2012). T. V. Johnson et al. concluded that routine depression and suicide screenings must occur specifically within the first month to year of diagnosis. The physician screenings must be repeated consistently throughout the first year as the patient’s psychosocial and spiritual realms are adjusting to the life-altering diagnosis. Routine offerings for behavioral health must accompany each visit, for the combination of the physiological and psychological symptoms places the patient at risk of becoming despondent, leading to poor decision-making about medical care (Kessler & Bromet, 2013). The palliative care approach to the patient with a serious illness addresses the psychological components of the complexity of coping with the illness (Kelly et al., 2008). The multidisciplinary view of the patient enables both the physician and the patient to examine all of the factors at play with the presentation of physical pain.

Summary on psychological issues. Successfully implemented, the patient's suffering, depression, and anxiety are managed through psychotropic medications and therapy, which can improve the overall quality of life (Daneault et al., 2003; Kissane, 2009; Li, Fitzgerald, & Rodin, 2012). Daneault et al.'s qualitative research specifically addressed the patient's suffering, as the cancer-treatment process induced feelings of being subjected to violence, being deprived, and living with a sense of doom. Patients reported experiencing the chemotherapy, radiation, and all of their side effects as being subjected to violence. In addition, the patients experienced the side effects of nausea and fatigue as depriving them of the lives they once had. Finally, Daneault et al. identified a common theme of living with a sense of doom or anticipation of the next torment. Clearly, the experience of having cancer, as documented in Daneault et al.'s study, demands an interdisciplinary approach that effectively addresses the psychological distress.

This call to action was echoed in Kissane's (2009) meta-analyses on the need for address of psychosocial issues to throughout the course of cancer treatment. Kissane identified that depressive symptoms evidenced by a sense of helplessness and hopelessness equated with a shorter survival rate for cancer patients. Kissane found that ultimately, group therapy was effective, as it addressed the social isolation that accompanies having cancer. Kissane concluded that a significant amount of work was needed to address suffering that leads to impaired psychosocial functioning. Li et al. (2012) solidified the above findings in their review of evidence-based practices of the utilization of psychotherapy and pharmacological approaches in the treatment of cancer patients. Li et al. found that psychosocial and pharmacological interventions benefited patients as evidenced by improved quality of life. Despite the research on the importance of inclusion of psychosocial factors in the patient's ability to cope with serious illnesses such as cancers, the physician must be the one who addresses these concerns with the patient (Li et al., 2012).

In summary, the physician is trained to address the physical manifestations of the disease, yet the psychological issues gravely impact the patient’s quality of life. The interplay of biopsychological dimensions of the patient not taken into account leads to poor pain management, which in turn leads to overuse of pain medications and diminished quality of life. Physicians lack knowledge about simultaneous management of the biopsychological aspects associated with serious illness (Clark, 1999; Elliott et al., 1995; Green et al., 2009). Palliative care’s inclusion of the psychological factors demystifies the patient’s perception of pain for the physician. In addition to the biopsychological aspects, palliative care includes the patient’s social support in the equation of treatment of the disease.

Social Support System

Serious illnesses affect more than the patient. Such illnesses affect family members and friends. In Alaska, serious illness affects the whole village. This section explores the impact of serious illness on the support system of the patient with a serious illness.

The caregiver. As the patient progresses through disease, his or her energy level decreases, making daily activities such as grooming or engaging with the family difficult. The patient becomes increasingly dependent upon caregivers. The caregiver is often a family member who lacks the knowledge and skill to address the cancer patient’s multitude of issues (Rha, Park, Song, Lee, & Lee, 2015). Rha et al. conducted a secondary data analysis of a cross-sectional study on the impact of such caregiving on the family member’s quality of life. The study consisted on 227 family caregivers. The findings showed a correlation between the stage of disease progression and the family caregiver’s quality of life. The more progressed the stage of illness, the more negative impact on the family caregiver’s quality of life. The family members experienced a high degree of emotional distress and loss of control of their lives. Overall, Rha et al. identified that caregiving for a patient with cancer increases psychosocial and economic burdens on the caregiver. These burdens had significant negative impacted the caregiver’s quality of life, impacting not only their sense of well-being but also their physical health.

Northouse et al. (2012) found in five meta-analyses that caregivers were prone to physical symptoms such as sleep deprivation and other illnesses related to decreased immune systems. These findings are significant since the patient’s physician overlooks caregivers’ biopsychosocial needs. Yet the physician relies on the caregiver to be an integral player in the patient’s care. Hudson et al. (2012) found that family caregivers were at least 50% more likely to be in poor health than the general population. Hudson et al. also noted that caregivers became increasingly socially isolated, leading to increased depressive and anxious symptoms. Palliative care is uniquely designed to address caregiver stress. Yet physicians, as noted above, continue to provide late referrals to palliative care. This not only impacts the quality of life of the patient but fuels the possibility for complex physical and mental health concerns for the caregiver (Hudson et al., 2012). Without intervention, the caregiver is vulnerable to caregiver burnout (Won &

Song, 2012). Won and Song, in their study of 334 caregivers, found that psychosocial and economic burdens impacted the care provided to patients. Left unaddressed, the study indicated there could be a higher rate of patient abuse as well. Gill, Laporte, and Coyte (2013) found in their literature review that caregiver stress leads to patients requiring more hospitalizations and incurring increased overall medical costs. These findings emphasize the need to attend to not only the patient’s biopsychosocial needs but also those of the caregivers. These studies found that physicians lack the education about the need to address the complex needs of the caregiver. Another key area seldom addressed but consequential to caregiving is the intimacy issues between patients and their life partners.

Intimacy. One area seldom addressed in mainstream medicine is intimacy and sexuality. This is especially true in physicians’ training (Shindel & Parish, 2013). Shendel and Parish identified in their review of the literature that medical schools tend to focus on sexual dysfunctions, not sexual health. Even among gynecologists, Sobecki, Curlin, Rasinski, and Lindau (2012) found that less than 28% asked their healthy patients about sexual satisfaction.

Cancer and other serious illness can have a long trajectory. Patient and partner may experience a healthy sexual life through the journey. Physicians who do not inquire about the couple’s sex life miss a critical part of the story of how the couple is coping with the demands of the condition. In fact, the impact of serious illness on intimacy ranks high among issues on quality-of-life scales (Arriba, Fader, Frasure, & von Gruenigen, 2010; Badr & Carmack Taylor, 2009; Beck et al., 2009; Carter et al., 2010; Mercadante, Vitrano, & Catania, 2010; Pardo et al., 2010).

In one study, Flynn et al. (2012) found that 74% of patients wanted to discuss sexuality and intimacy with their physicians, but only 23% of lung cancer patients, 29% of breast cancer patients, and 39% of colorectal cancer patients were able to engage their physicians in the discussion. Flynn et al. did report that 79% of prostate cancer patients had a better outcome in discussing sexuality with their physicians. Perhaps this was due to the direct correlation between the prostate and sexual performance. Palliative care specialists understand the importance of intimacy throughout the lifespan of the patient and his or her partner (Matzo, Ehiemua Pope, & Whalen, 2013; Otis-Green, Sidhu, Del Ferraro, & Ferrell, 2014). Matzo et al. (2013) conducted a literature review of the subject and found that sexual intimacy was understudied. Yet the authors stressed that sexual issues play an important part in both the caregiver's and patient's overall quality of life. Otis-Green et al. (2014) echoed these findings and stressed the need for palliative care specialists to be mindful of this important aspect of a couple's quality of life. Frank conversations between patient, caregiver, and physician can alleviate yet another stressor in a couple's life (Otis-Green et al., 2014).

Social support. In addition to the couple's life, the patient's social network plays an important role in quality of life. Lack of social support has been linked to poorer quality of life and higher mortality rates for patients with serious illnesses (Stanton, 2012). One study of 2,835 women with breast cancer found that such women, when socially isolated, had a 66% higher risk of mortality, despite the stage of the disease

(Kroenke, 2006). Another, longitudinal study of 9,333 participants showed that those who were socially isolated had a higher rate of mortality, especially men (Stringhini et al., 2012). Despite studies indicating that a patient's social support is critical for quality of life, research suggests that physicians lack the necessary behaviors in making the referrals to palliative care that encompass the importance of social support (Busolo & Woodgate, 2015; J. M. Lewis, DiGiacomo, Luckett, Davidson, & Currow, 2013). As evident in these studies, social isolation plays an intricate part in the health and well-being of the patient. Physicians must learn to inquire about not only immediate family but also the patient’s outer circle of support. These people deliver meals, call offering a ride somewhere, or just provide an opportunity to forget for a moment with a good joke. The one area in this formula that is unique in coping with a serious illness is the need to address the spiritual angst that comes with the uncertainity of the condition. The next section discusses the spiritual issues that arise with a diagnosis of a serious illness and the importance of physicians’ addressing them.

Spirituality

In the secular world of medicine, the patient's spirituality is not taken into account in the treatment of the patient (Best, Butow, & Olver, 2014; Siddall, Lovell, & MacLeod, 2015). Best et al. (2014), in a grounded theory study of 15 cancer patients, found that despite patients’ longing for their physician to know their spiritual orientation, physicians did not inquire. Patients identified that it was not specifics of their spiritual life that were important but the physician’s willingness to treat them holistically. Siddall et al. (2015)

highlighted the importance of inclusion of the patient’s spirituality as a factor in pain management.

Siddall et al. (2015) distinguished spirituality from religion by defining it as a sense of meaning or connection to others. This sense of connection to others or a greater whole fosters a barrier against loneliness. Patients experiencing a life-threatening condition are pondering the meaning of life. Such patients also question the impact they have had in this world. Issues such as loneliness and unresolved relational conflicts are common for such patients. These underlining concerns, when unaddressed, increase the patients’ suffering and physical pain. Thus, when diagnosed with a serious illness, 96% of patients reported experiencing spiritual angst impacting their overall quality of life (Mako, Galek, & Poppito, 2006). Despite these findings, spirituality is the most overlooked component in the patient’s life. Spirituality can be the underpinning of pain that remains unrelenting despite conventional medical treatments (Rawdin, Evans, & Rabow, 2013).

Spirituality, as mentioned above, goes beyond the patient’s religious practice. It consists of the existential questions that surface when facing a life-limiting condition. The patient faces existential uncertainties that stir unresolved grief, guilt, anger, and loneliness (Saunders, 1981a). Such issues are part of the total pain assessment; left unresolved, these issues gravely impact the patient’s ability to cope with the physical pain (Saunders, 1981a).

Exline, Prince-Paul, Root, and Peereboom (2013) researched patients who were religious. The authors found that 43% of the patients who experienced unresolved spiritual issues, including anger toward God, experienced more depression and greater presentation of physical pain than those who did not have unresolved spiritual issues. For those experiencing anger with God, especially for strong believers, it has repercussions on the physical, psychological, and social well-being of the patient. Unresolved, both patient and caregiver experience greater loss of quality of life (Exline et al., 2013).

Conversely, in another survey study, 221 patients reported that praying reduced pain-causing inflammation and overall improved quality of life (Paiva, Paiva, Yennurajalingam, & Hui, 2014). There is also evidence that addressing spiritual issues decreases overall health care cost by reducing hospitalizations and futile treatments (Balboni et al., 2011). These studies exemplify the importance of spirituality in the patient's life. But for the physician managing the patient's physical symptoms, the additional challenge of addressing these issues may feel overwhelming. The key in palliative care is the multidisciplinary approach to the patient. Systematic review of 128 studies showed that utilizing the theory of total pain in treating the patient fostered improved relationships with the physician and better outcomes for the patient (Best, Aldridge, Butow, Olver, & Webster, 2015).

Nonetheless, addressing patients' spiritual issues may be outside the scope of practice for the physician. The physician who has knowledge of the holistic approach used in palliative care can provide either a referral or a consultation with a palliative care team on best practices in addressing spiritual issues (Pearce, Coan, Herndon, Koenig, & Abernethy, 2012). Such referrals, especially early on, allow patients faced with spiritual and existential issues the support of an interdisciplinary team, and the experience of an improved quality of life. The following section explores the interdisciplinary approach used in palliative care.

Palliative Care's Interdisciplinary Approach to Treating Serious Illness

Palliative care is an interdisciplinary approach to treating patients with life-threatening conditions such as cancer. Palliative care addresses the physical, psychological, social, and spiritual needs of the patient and family. The team consists of physicians uniquely trained in pain management. Social workers and psychologists are trained to address emotional issues such as depression, anxiety, and social issues that affect patients and the family during the course of the illness. Social workers also address socioeconomic concerns that the patient faces with cost of care. In addition, palliative care includes a nondenominational minister trained to address the complex spiritual and existential issues that arise for the patient and the family. In contrast to hospice care, the palliative care team, when used to its fullest capacity, works in conjunction with the medical team as the patient undergoes curative treatment. The patient and family may continue to stay with the palliative team once curative treatment ends or transfer to hospice care to take the patient and family through the final days. The very nature of palliative care fosters a collaborative effort among the patient's specialists, such as oncologists, to ensure the best care for patients with serious illnesses (Ciemins, Brant, Kersten, Mullette, & Dickerson, 2016).

Palliative care specialists are uniquely trained to break down the silos of treatment by fostering communication between the specialists, the patient, and the family to ensure that quality of life is the primary objective (Cohen, Patterson, & Coursin, 2014). An example of this phenomenon is a patient admitted to the ICU. There are a prolific number of specialists, such a intensivists, cardiologists, and/or nephrologists, who are involved in the case. The palliative care team works in conjunction with the team members to ensure that the patient and family members are working together to abide by the patient's wishes. Without palliative care involvement, the specialists rarely communicate and may even be at odds with one another regarding the goals of care (Cohen et al., 2014). Furthermore, when palliative care is involved, research has shown that patients experienced fewer ICU stays (Aslakson et al., 2014). The reduction of ICU stays and inpatient services can reduce the cost of care at the end of life by as much as 30% (Khandelwal, Benkeser, Coe, & Curtic, 2016). Yet physicians continue to lack knowledge about palliative care to utilize it to its full potential (Aldridge et al., 2016).

In summary, palliative care is distinctive in that it addresses the physical, psychological, social, and spiritual well-being of the patient and the family. Yet physicians lack the knowledge, attitudes, and behaviors to embrace the principles of palliative care (Schaefer et al., 2014). But the tide is changing in medicine, making the inclusion of palliative care a necessity, if only for its economic benefits (S. Smith et al., 2014). Physicians will need to change behaviors taught in the pre-palliative care era which fostered aggressive treatment that was not patient-driven (Schulman-Green et al., 2012). This current study adds to the literature on physicians' knowledge of, attitudes toward, and behaviors regarding palliative care, and specifically how palliative care impacts the different needs of urban and rural Alaskans.

Urban Versus Rural Palliative Care in Alaska

The delivery of health care in Alaska is unique in that physicians serve patients who live in the geographically largest state in the union (Reunion Technology, 2020). Of the three major urban areas, despite having hospitals, only Anchorage has full-service hospitals and specialists with the capacity to serve the entire state (Tilburt et al., 2014). Anchorage also houses the military hospital and Alaska Native Tribal Health Consortium. Thus, veterans, Alaskan Natives, and American Indians with serious illnesses must travel into the city to receive treatments such as radiation and chemotherapy (Noe, Kaufman, Kaufmann, Brooks, & Shore, 2014). It is not uncommon for those with serious illnesses to seek additional care, such as clinical trials for advance cancer treatments in hospitals in the continental US. For Alaskans, this requires that patients not only leave their social support systems but also incur additional economic burdens.

Patients living in rural Alaska have access to community hospitals. Community health aides (CHAs) service those living in remote areas. CHAs are paraprofessionals who provide routine care and emergency care with the direct supervision of a physician through telemedicine (Golnick et al., 2012). The supervising physician is located as far as 1,000 miles away.

Further from the epicenter of full-service medical centers, patients with serious illnesses face choices of doing without the comforts provided by such places, such as hospital beds and intravenous pain control (McGrath et al., 2007). In some villages, to this day, there is no running water, which increases problems of infection (Thomas et al., 2016).

Medical intervention for patients in rural and remote areas beyond the road system means that access to medical care such as chemotherapy is only available by small plane, snow machine, boat, or even dog sled (Kokesh, Ferguson, & Patricoski, 2011). If a patient's condition requires emergency care, the patient must travel to a hub hospital for medical evacuation by air to the city (Sacco et al., 2004). Patients requiring long-term care must arrange to live in the city until treatment is complete (DeCourtney, 2010; DeCourtney et al., 2010). Patients with a terminal illness must decide to continue living in the city, away from their social support system, or return to their village (Kokesh et al., 2011). Having a serious illness is complicated, and far more arduous when living in rural and remote Alaska.

Physicians serving patients in rural and remote areas are aware of the medical complications that can quickly compromise the patient's health (Jacobs-Wingo et al., 2016). The nature of palliative care is to take into consideration not only the patient's physical status but also the psychological, social, and spiritual well-being of the patient and the family (Meier & Brawley, 2011). The patient who chooses to return home to a rural or remote village for emotional, social, and spiritual reasons causes concern for the physician who is responsible for the medical condition of the patient (Doorenbos et al., 2011).

Summary

This is a pivotal time in history for the practice of medicine. No matter what new medical technology or treatments for cancer are available, the rapid increase in the number of elderly patients who die will continue. Yet, physicians continue to experience conflicts with a code established in Grecian days: *do no harm* (Holmboe & Bernabeo, 2014). This ethical code was established long before a patient could linger on life support for days, if not years (Saft et al., 2014); or take prescribed treatments that would give the patient days to live with painful side effects, leaving the family financially bankrupt (McCaffrey et al., 2015). Nevertheless, physicians practicing in specialty silos have continued with the attitude of not wanting to take away hope from their patients (Cohen et al., 2014; Coulourides Kogan et al., 2015). They surge forth, recommending treatments in hope of extending the patient's number of days of life, despite their impact on the patient's quality of life (Jenkins, 2015). But physicians are on the cusp of learning new ways of approaching patients with serious illnesses. This study adds to the literature on physicians' knowledge of, attitudes toward, and behaviors regarding the specialty of palliative care, which can redefine hope for their patients by improving the days lived with better quality of life.

Palliative care has been demonstrated to improve the number of days of life with better quality of life for patients with serious illnesses such as cancer (Irwin et al., 2013; Jackson et al., 2013; Meier & Brawley, 2011). Nonetheless, as demonstrated in this literature review, physicians continue to make late referrals to palliative care in fear that they are giving up hope for a cure (Gidwani et al., 2016). To forge forward to educate physicians about the holistic approach used in palliative care, there must be research on the knowledge, attitudes, and behaviors of physicians regarding palliative care, especially in this current time of transition from physician-driven care to patient-centered care (Hudon et al., 2012). This current study was designed to help fill this gap in the literature about the relationship between the physician's knowledge and attitudes about and their actual behaviors associated with palliative care.

The medical practices associated with patients with serious illnesses living in urban and rural areas of Alaska require study to provide stakeholders with the basis to fund services to ensure quality of life for all Alaskans, regardless of geographical location. This literature review reveals the dearth of studies exploring the differences between physicians caring for the serious ill in the urban and rural areas of Alaska (Duwe, Petterson, Gibbons, & Bazemore, 2014). This review verified the significant hardships experienced by patients who need to relocate to urban areas for their care (Bauer & Plescia, 2014; Glonick et al., 2012; Pruthi et al., 2013; Sequist, Cullen, & Action, 2011).

The method employed in this study was chosen to help fill the gap in the literature about the differences between urban and rural physicians' knowledge, attitudes, and behaviors associated with applying the principles of palliative care with their patients with serious illnesses such as cancer. This study thus adds to the body of research on the physician's knowledge, attitudes, and behaviors regarding palliative care in urban and rural Alaska. Thus, this study's results may help to facilitate positive social change in Alaska by informing educational programs for physicians about the benefits of palliative care. Such programs may facilitate all Alaskans, regardless of where they live, in gaining access to palliative care at the beginning of the diagnosis and treatment of a serious illness. In addition, knowledge gained from this study may support innovative practices that will allow patients to choose medical care sites that not only treat the physical aspects of the disease but also nurture their psychological, social, and spiritual well-being. In addition, physicians will benefit from insights into the need for effective palliative care. Chapter 3 provides the details of this current study's quantitative method. The chapter discusses the methodology, sample, instrumentation, and analysis used to conduct the study.

Chapter 3: Research Method

Overview

The purpose of this study was to examine the relationship between Alaskan physicians' knowledge, attitudes, and behaviors regarding palliative care in treating seriously ill patients. In addition, this study compared Alaskan physicians who practice in urban and rural areas to determine whether there was a difference in their knowledge, attitudes, and behaviors regarding palliative care. This chapter provides this current study's research design and its rationale to help fill a gap in the research on palliative care. The chapter also details the study's variables, and time and resource constraints, consistent with the design choice. Further, this chapter details the methodology used in this study, including the target population and its estimated size, the sample size, and sampling procedures. The procedures for recruitment, data collection, and data analysis are explained, with an introduction to the instrument used in this study, combining three existing scales into one survey. The threats to validity and ethical issues pertinent to this study are also examined.

Research Design and Rationale

The purpose of this current study was to examine the IVs of the physicians' knowledge of and attitudes toward palliative care in relationship to the DV of the physicians' behavior related to palliative care. The first research question, null hypothesis (H_01), and alternative hypothesis (H_a1) were as follows:

RQ1: Does a relationship exist between Alaskan physicians' knowledge and attitudes regarding palliative care and their behaviors regarding palliative care?

$H_0$1: There is no relationship between the physician’s knowledge, attitudes, and behaviors regarding palliative care.

H_a1: There is a significant positive relationship between physicians’ knowledge, attitudes, and behaviors regarding palliative care.

In addition, this study compared two subpopulations, Alaskan physicians practicing in urban and in rural areas (IV), on the physicians’ knowledge, attitudes, and behaviors (DVs) regarding palliative care. The second research question and related hypotheses were as follows:

RQ2: Is there a statistically significant difference between urban and rural physicians’ knowledge, attitudes, and behaviors regarding palliative care?

$H_0$2: There is no statistically significant difference between urban and rural physicians’ knowledge, attitudes, and behaviors regarding palliative care.

H_a2: There is a statistically significant difference between urban and rural physicians’ knowledge, attitudes, and behaviors regarding palliative care.

The research design used was the non-experimental quantitative method (Frankfort-Nachmias, Nachmias, & DeWaard, 2014). The experimental model was not feasible because it was not possible to manipulate the predictable variables (Frankfort-Nachmias et al., 2014).

The sampling pool was derived from the State of Alaska Department of Commerce, Community and Economic Development: Corporations, Business and Professional Licensing (2017) listing of physicians licensed to practice in the state. Regarding time constraints, survey completion was needed within the 2018 calendar year.

The resource constraint was the financial expense of mailing the surveys. Mailing the surveys was chosen as the sampling method because extant research indicated that physicians were more likely to return a mailed survey than respond to an e-mail survey (VanGeest, Johnson, & Welch, 2007).

The non-experimental method fit this study because the study's external validity is of the utmost importance to allow advancement of knowledge in the field by generalizing the findings in the discipline of palliative care (Frankfort-Nachmias et al., 2014). In enabling generalization of this study's findings, the results add to the body of research in this field and foster increased knowledge about the value of palliative care. In addition, the findings may be useful in addressing the attitudes and behaviors of physicians practicing palliative care (Frankfort-Nachmias et al., 2014).

Methodology

Population

The target population for the study was registered physicians active and in good standing with the State of Alaska Department of Commerce, Community and Economic Development: Corporations, Business and Professional Licensing (2017). Physicians had to have been residing and practicing in Alaska. This was determined by their license having an Alaskan zip code (United States Zip Codes.org, 2020). Physicians identified in the Alaska Department of Commerce roster as retired, inactive, or on probation were excluded. Physicians who had out-of-state zip codes were also excluded. Using this vetting process, the population for this study was 854 physicians practicing in the State of

Alaska. Of the 854 physicians, 684 practiced in urban areas and 170 practiced in rural areas, the two subpopulations for this study's second research question.

Sampling and Sampling Procedures

The sample strategy for RQ1 was random sampling because it provided a greater coverage of the population (Creswell, 2013). A random number between 1 and 5 was chosen using the RANDBETWEEN function in Microsoft Excel to indicate the first provider chosen from the list qualified physicians, and every fifth provider thereafter, for a recruiting pool who were invited to participate.

Stratified sampling was used for RQ2. Stratified sampling allowed for the separation of urban and rural physicians from the population (Creswell, 2013). The U.S. Census Bureau (n.d.) defined *urban* as block groups of a population density of 1,000 people per square mile. Based on this definition, rural physicians practicing outside of the three major urban areas (i.e., Anchorage, Fairbanks, and Juneau) were eligible for this subpopulation. Physicians were identified as practicing inside or outside of the urban areas by zip code (United States Zip Codes.org, 2020).

The sample size calculations required an a priori decision regarding the desired effect size for the study, an alpha level (most commonly 5%), and the desired power level of 95%. Social science convention was used as the decision-making factor for each and is described next, beginning with RQ1 (Creswell, 2013).

Minimum adequate sample size was determined for RQ1 using G*Power 3.1; given two predictor variables, and inputting the variables of interest, 55 participants were necessary given the following statistical parameters: effect size of 0.25, alpha = .05, and power = .95 (Creative Research Systems, 2012). A multivariable regression was used to test the association between knowledge and attitudes (i.e., the two predictor variables) and physicians' behaviors with palliative care (i.e., the criterion variable).

To answer RQ2, one-way MANOVA was used to test the difference between urban and rural (i.e., the IV with two levels) physicians' knowledge, attitudes, and behaviors (i.e., the DVs) associated with palliative care. Using G*Power 3.1, and inputting the variables of interest, 75 participants, 60 urban and 15 rural, were necessary given the following statistical parameters: effect size of 0.25, alpha = .05, and power = .95 (Creative Research Systems, 2012). Therefore, statistically adequate exploration of this study's research questions required a minimum of 75 participants.

Procedures for Recruitment, Participation, and Data Collection

Participants were recruited using the 2017 roster of licensed physicians practicing in Alaska as identified by the State of Alaska Department of Commerce, Community and Economic Development: Corporations, Business and Professional Licensing (2017). Physicians had to have been active, in good standing, and practicing in Alaska. The demographics gathered include the physician participant's (a) gender, (b) age, (c) years of experience, and (d) total (career) number of deceased patients the physician had treated for a serious illness until end of life. In addition, demographics on region of practice (urban or rural) were collected to ensure accuracy of that in case the addresses were incorrect, and to aid the validity of the study in answering RQ2.

The survey packet included (a) a cover letter inviting qualified physicians to voluntarily participate in this study (see Groves et al., 2009), (b) return instructions, (c) a prepaid return envelope, (d) the study’s survey instrument, and (e) the informed consent form (see Groves et al., 2009). An e-mail was sent 3 weeks after the initial mailing, again inviting physicians to participate in the study or thanking them for returning the completed packet. Completed surveys were mailed using the prepaid return envelope to a post office box set up specifically for the purpose of this study. Those not wishing to participate were able to exit from the study by not responding to the survey, as was stated on the consent form.

Instrumentation and Operationalization of Constructs

For this study, three existing instruments were incorporated into one survey used to measure the variables. These variables were knowledge (IV), attitudes (IV), and behaviors (DV). The respective authors of the existing instruments provided permission to use and incorporate their instruments into one survey to be sent to Alaskan physicians. Each instrument is introduced and explained below, and permissions for use and incorporation of each in this study’s survey instrument are included herein in individual appendices.

Knowledge: PEACE-Q. To study physicians’ knowledge (IV) of palliative care**,** the Palliative Care Emphasis Program on Symptom Management and Assessment for Continuous Medical Education (PEACE-Q) instrument was chosen for its extensive use in studying physicians’ knowledge in palliative care. PEACE-Q is a reliable and validated version of the original instrument, PEACE, which was developed in 2008 (Nakakzawa et al., 2009). In the United States, PEACE has been tested for reliability and validated through the Education on Palliative and End-of-Life Care Project (Yamamoto, Kizawa, Nakazawa, & Morita, 2013). The PEACE-Q was validated in 2010 (Yamamoto et al., 2013). The original PEACE instrument consisted of 83 questions, whereas the PEACE-Q consists of 33 true/false questions (Yamamoto et al, 2013). The PEACE-Q was chosen for this study for its brevity yet comprehensiveness of measuring physicians' knowledge. For this study, questions 2 and 3 were modified with the permission (Appendix A) of the author to address the unique needs of the United States.

The PEACE-Q measures physician's knowledge in the following nine domains: palliative care philosophy, cancer pain management, side effects of opioids, dyspnea, nausea and vomiting, psychological distress, delirium, communication, and knowledge of community based palliative care (Yamamoto et al., 2013). A score of 90% or higher on the PEACE-Q's 33 true/false questions indicates the physician had knowledge of palliative care (Yamamoto et al., 2013). Permission for use, incorporation, and the aforementioned modification of two questions in the instrument is in Appendix A.

To ensure the PEACE-Q adequately measures the domains, the authors confirmed the content validity by using the Delphi method with a group of physicians, palliative care specialists, and a psychiatrist (Yamamoto et al., 2010). In the next phase of validation, Yamamoto et al. sent the instrument to a random sample of 735 physicians from 15 convenience-selected hospitals. In addition, the authors recruited 66 palliative care specialists from the original PEACE study in Japan for known-group validity. The known-group validity was significant as it determined the PEACE-Q instrument measures the difference between experts in the field and other physicians. Difficulty and discrimination of the PEACE-Q were determined through use of the two-parameter logistic item response theory (Yamamoto et al., 2013). Ram Internal Consistency, determined using the Kuder-Richardson *KR20* theory (Yamamoto et al., 2013) was 0.87; the test-retest was 0.84. The PEACE-Q instrument's 33 true/false questions were incorporated into this study's survey to measure physicians' knowledge of palliative care.

Attitudes: Thanatophobia scale. The Thanatophobia scale (TS) was chosen to measure physicians' attitudes about caring for those who are dying. Merrill, Lorimor, Thornby, and Woods (1998) developed the TS at Baylor College of Medicine in 1998. The TS authors' initial purpose was to measure the attitudes of medical providers caring for AIDS patients (Merrill et al., 1998). The TS uses seven questions, each with a 7-item Likert scale, ranging from *strongly disagree* to *strongly agree*. Thus, scores range from 7 to 49 with the greatest score indicating negative attitudes toward caring for the dying (Merrill et al., 1998). Items measure these attitudes through questions such as, "It is frustrating to have to continue to talking with relatives and patients who are not going to get well," or "I don't look forward to being the personal physician of a dying patient" (Merrill et al., 1998). The TS was appropriate for use in this study because it captures the attitudes of physicians working with patients who are seriously ill and dying. Permission for use and incorporation of the TS is in Appendix B.

The TS has been found reliable and valid in numerous studies (Chaikin, Thornby, & Merrill, 2000; Kavas & Oztuna, 2011; Merrill, Dale, & Thornby, 2000; J. L. Morrison, Thompson, & Gill, 2012). Internal consistency reliability using Cronbach's alpha (α) co-efficiency was 0.87. Varimax rotated principle components analysis rated the 7-item scale with a high factor loading of 0.81. The TS has been demonstrated to be valid with a population of physicians (Mason & Ellershaw, 2010).

The participants for the development of the TS consisted of four groups: (a) 153 freshmen, (b) 463 senior medical students, (c) 55 primary care physicians, and (d) 47 student nurses (Merrill et al., 1998). Originally, the survey had 110 questions, including seven questions on thanatophobia. The other questions were derived from other published instruments that measured attitudes. The topics included authoritarianism, tolerance of uncertainty, and reliance on technology, to diagnosis, mood, sensitivity, social desirability, and negative perceptions of patient's psychological well-being.

> For each of the four groups, inter-correlations of response to the seven items were then factor analyzed using the principal factors method with squared multiple correlations initially entered on the diagonal. A single factor with an eigenvalue greater than one was extracted from each group. (Merrill et al., 1998, p. 124)

The alpha reliability coefficient for internal consistency was 0.87. Content validity had been tested in both the US and UK (Mason & Ellershaw, 2004). The TS was found to be a reliable and valid test for attitudes toward caring for those dying. The TS's seven questions were also incorporated into this study's survey to measure physicians' attitudes toward caring for the dying.

Behaviors: Palliative Care Self-Efficacy scale. Physicians' behaviors regarding palliative care were measured using the Palliative Care Self-Efficacy (PCSE) scale. Phillips, Salamonson, and Davidson (2011b) designed the PCSE scale in 2011 to measure the participant's behavior in implementing the principles of palliative care. The PCSE scale consists of 12 items that have subscales that measure behaviors in providing patients psychosocial support, and in symptom management (Phillips et al., 2011a). The PCSE scale uses a 4-point Likert scale; thus, overall scores can range from 12 to 48:

1. need further basic instruction;
2. confident to perform with close supervision/coaching;
3. confident to perform with minimal consultation; or
4. confident to perform independently. (p. 1097)

Permission for use and incorporation of the PCSE scale is in Appendix C.

Construct validity of the PCSE scale was measured by Bartlett's test of sphericity with a significance ($p < 0.001$) and the Kaiser-Meyer-Olkin measure of sample adequacy of 0.914 (Phillips et al., 2011a). Phillips et al. reported that,

> Two factors with eigenvalues greater than 1.0 were extracted, accounting for a cumulative total variance of 65.3%. The first factor, "*Perceived capability to answer patient's end-of-life concerns*" accounted for 54.6% of the total variance and the second factor, "*Perceived capability to respond to patient's end-of-life symptoms*" accounted for 10.7% of the total variance. All 12 items of the [PCSE] scale loaded significantly on one of the two factors. . . . The mean score of the total "Palliative care confidence subscale" was 33.4 (SD: 8.3, range: 12–48), the "Perceived capability to answer patient's end-of-life care concerns" subscale was 15.7 (SD: 4.5, range: 6–24) and the "Perceived capability to respond to patient's end-of-life symptoms" subscale was 17.8 (SD: 4.5, range: 6–24). Using the

> Kolmogorov-Smirnov's [*sic*] test for normal distribution of score, neither the total scale nor the subscales were normally distributed. (p. 1098)

Predictive validity was assessed using the Mann-Whitney *U* Test for group comparison (Phillips et al., 2011a).

Internal validity using Cronbach's alpha for the 12 questions was 0.92. The Cronbach's alpha for the subscale of *perceived capability to answer patient's end-of-life care concerns* was 0. 87. Cronbach's alpha for the subscale *perceived capability to respond to patients end-of-life symptoms* was 0. 91. Therefore, the PCSE scale was a reliable and valid scale for use in this study.

The PCSE scale was derived from three different scales designed to measure a provider's competency in providing for physical, psychological, social, and spiritual needs of a patient at the end of life (Phillips et al., 2011a). Weissman, Ambuel, Norton, Wang-Cheng, and Schiedermayer developed the first scale in 1998 to measure physicians' behaviors in managing symptoms of terminally ill patients. Eagar et al. (2004) developed the second scale to measure physicians' competencies in delivering palliative care services in rural settings. The third scale, Attitudes Toward Death Survey, developed by Strumpf (2004), was used in the national project Promoting Excellence in End-of Life Care (Robert Wood Johnson Foundation, 2009) to measure healthcare providers' attitudes toward death. Phillips et al. (2011a) selected from these three scales 12 items that measure the behaviors associated with palliative care and the provider's perception of effectiveness in delivering care to dying patients.

The original sample was 405 health care professionals who had received palliative care training on the job (Phillips et al., 2011a). Phillips et al. established validity using a 2-factor solution of the PCSE scale and found an extracted factor loading above the 0.4 cutoff. Reliability using Cronbach’s alpha ranged from 0.87 to 0.92, demonstrating good reliability (Phillips et al., 2011a). The PCSE scale’s 12 items were also incorporated into this study’s survey to measure physicians’ behaviors in implementing the principles of palliative care. This study’s survey, incorporating all three of the abovementioned existing instruments, is described next.

Incorporation of existing instruments into this study’s survey. The three existing instruments described above were incorporated into a single survey for this study, referred to herein as the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D). To measure physicians’ knowledge (IV in RQ1, DV in RQ2), attitudes (IV in RQ1, DV in RQ2), and behaviors (DV in both RQ1 and RQ2) of Alaskan physicians, the survey incorporated the PEACE-Q instrument (Yamamoto et al., 2013), the TS (Merrill et al., 1998), and (c) the PCSE scale (Phillips et al., 2011b). Table 1 recaps the elements incorporated into this study’s Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey.

Each of the three sections of the survey—knowledge, attitudes, and behaviors—was scored separately to determine the relationship between the two IVs and the DV for RQ1, and the differences between rural and urban physicians’ knowledge, attitudes, and behaviors for RQ2. In addition, this study’s survey (Appendix D) included demographics of gender, age, years of clinical experience, number of patients treated with a serious illness, and location of practice (urban or rural). Details of the scoring are explained in the Data Analysis Plan section below.

Table 1

Elements Comprising This Study's Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey

Variable & Type			Instrument & Source	Item Type & Number	
	RQ1	RQ2		Type	#
Knowledge	IV	DV	PEACE-Q (Yamamoto et al., 2013)	True/False	33
Attitudes	IV	DV	TS (Merrill et al., 1998)	7-pt Likert	7
Behaviors	DV	DV	PCSE (Phillips et al., 2011b)	4-pt Likert	12
Urban	CV	IV	n/a	Demographic	
Rural	CV	IV	n/a	Demographic	

Note. Use and incorporation of instruments with permission (Appendices A, B, and C) of cited researchers, as is modification of two questions in PEACE-Q for U.S. use. IV = independent variable; DV = dependent variable; CV = categorical variable.

Data Analysis Plan

A current version of SPSS was used for data management and statistical analysis. Descriptive statistics were used to measure the research variables including demographics. Data cleansing occurred by eliminating surveys with omitted values.

Data analysis for RQ1. To address RQ1, a multivariable regression was used to test the ability of knowledge and attitudes (i.e., two predictor variables) to predict physicians' behaviors with palliative care (i.e., the criterion variable).

RQ1: Does a relationship exist between Alaskan physicians' knowledge and attitudes regarding palliative care and their behaviors regarding palliative care?

$H_0$1: There is no relationship between the physician's knowledge, attitudes, and behaviors regarding palliative care.

H_a1: There is a significant positive relationship between physicians’ knowledge, attitudes, and behaviors regarding palliative care.

To examine RQ1, a multivariable regression was conducted to determine if there was an association of the physicians’ behaviors (DV) with their knowledge and attitudes (IVs). Multivariable regression can assess simultaneously the strength, direction, and significance of the association for two IVs with a DV. The DV in this analysis was behavior, and IVs were knowledge and attitudes. The assumption of normality was assessed. Normality assumes that the scores are normally distributed (bell-shaped) and as assessed using the one-sample Kolmogorov-Smirnov Test. The *t*-test was two-tailed with the probability of rejecting the null hypothesis of no relationship between the IVs and DVs. If there is no relationship (the regression coefficient = 0) at $p < 0.05$ (Statistics Solutions, 2013). In addition, to see if the relationship between knowledge and attitudes on behaviors was impacted by location of physician, sensitivity analysis included an additional regression model including a third, categorical variable (CV) indicating urban or rural location of the physician.

Data analysis for RQ2. To address RQ2, a MANOVA was used to assess the mean differences between urban and rural (IV) and the physician’ knowledge, attitudes, and behaviors (DV).

RQ2: Is there a statistically significant difference between urban and rural physicians’ knowledge, attitudes, and behaviors regarding palliative care?

H_02: There is no statistically significant difference between urban and rural physicians’ knowledge, attitudes, and behaviors regarding palliative care.

H_a2: There is a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

To examine RQ2, MANOVA was conducted to assess if mean differences existed. MANOVA is an appropriate statistical analysis when the purpose of research is to assess if mean differences exist on more than one continuous DV by one or more discrete IVs. For this research question, the IV was a CV designating urban or rural physician-provider location; the three DVs were the scores for the physicians' knowledge, attitudes, and behaviors. MANOVA assessed whether mean differences among groups on a combination of DVs were likely to have occurred by chance. MANOVA creates a linear combination of the DVs to create a grand mean and assesses whether there are group differences on the set of DVs. MANOVA uses the *F* test. The *F*-test allows researchers to make the overall comparison on whether group means differ. If the obtained *F-value* is larger than the critical *F*, the null hypothesis is rejected. The assumptions of normality and homogeneity of variance/covariance matrices were assessed. Normality assumes that the scores are normally distributed (i.e., bell shaped) and was assessed using the one-sample Kolmogorov Smirnov Test. Homogeneity of variance assumes that both groups have equal error variances and was assessed using Levene's Test (Statistic Solutions, 2013).

Threats to Validity

A threat to external validity involves the ability to generalize the results uncovered in this study to all physicians practicing in other areas outside of Alaska. The study's external validity could be questioned because Alaska is unique when compared to other geographic areas. This was addressed by using surveys that had been validated and found reliable for medical providers throughout the United States.

Internal validity was at risk for selection bias in that specific demographics such as region or experience may have been underrepresented. To address this concern, I abided rigidly to the statistical number for representation of urban and rural areas by securing at least as many rural as urban participants to achieve an adequate sample size for each.

Statistical conclusion validity is the degree to which conclusions about the relationships among variables based on the data are correct or reasonable. The current study design carried some risk in this area in that only physicians interested in the topic may have responded (Groves et al., 2009). Some physicians who were uncomfortable with palliative care, for whatever reason, may have chosen not to participate. This concern was addressed by a demographic self-report question on the physician’s comfort with utilizing palliative care. This question used a Likert scale ranging from 1 (*very uncomfortable*) to 5 (*very comfortable*). The other concern in this area was the possibility of an inadequate number of returns. If this were the case, a remailing of the survey would have been done, this time selecting a stratified sample of every fifth physician rather than every tenth one. This concern was addressed by utilizing systematic sampling of the roster of all practicing physicians in Alaska (Groves et al., 2009). The use of systematic sampling ensured that the population was sampled evenly by methodically following this stratified sampling method (Groves et al., 2009).

Ethical Procedures

This section details the ethical procedures used to ensure this study's conduct upheld the highest ethical standards. Data used to locate, access, and recruit the participants were public domain, as found on the State of Alaska Department of Commerce, Community and Economic Development: Corporations, Business and Professional Licensing (2017). The informed consent letter notified participants that their contact information was found on the state's public website.

Ethical Concerns

All precautions were taken to follow the guidelines set forth by the National Institutes of Health (2008) Office of Extramural Research for *Protecting Human Research Participants*. The study was conducted throughout to ensure compliance with the Belmont Principles (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) of respect, beneficence, and justice.

- Respect: Respect for participants was manifest in allowing individuals to decline participating in the study by not returning the study survey.
- Beneficence: I ensured beneficence by minimizing risks to the individuals invited to participate in the study.
- Justice: I ensured justice by inviting all individuals per the participant recruitment and selection criteria noted herein to participate in the study and included the data of all who returned the completed survey per the instructions. This provided equity in diversity with no discrimination based on

age, disability, race or ethnicity, religion, gender, or sexual orientation.
Further, the study included both rural and urban population samples.

Data Collection and Treatment of Data

Individuals had the right to decline participation in the study by not returning the survey. Total anonymity was ensured by the immediate separation of the survey from the envelope and shredding the envelope. The surveys were kept in a locked filing cabinet with only me having the key. All related computer data were secured by passwords known only by me. The data, both hard copy and electronic media, will be kept secure for 5 years from the date of publication of this dissertation research, and destroyed in an irretrievable manner thereafter.

Summary

This quantitative study was a non-experimental design that utilized a survey to determine the relationship between Alaskan physicians’ knowledge, attitudes, and behaviors regarding palliative care in treating seriously ill patients. In addition, the study examined the difference between physicians practicing in urban and rural areas regarding their knowledge, attitudes, and behaviors about palliative care in treating seriously ill patients. The next chapter presents the findings of the survey.

Chapter 4: Results

Introduction

The purpose of this study was to help fill the gap in research about the knowledge, attitudes, and behaviors of urban and rural Alaskan physicians regarding palliative care. The study accomplished this purpose by employing a non-experimental, quantitative study that examined the relationship between Alaskan physicians' knowledge and attitudes (i.e., the IVs) and their behaviors regarding palliative care (i.e., the DV). In addition, this study determined whether there was a statistically significant difference between physicians who practiced in urban versus rural areas, in their knowledge, attitudes, and behaviors regarding palliative care.

The study addressed following research questions and hypotheses:

RQ1: Does a relationship exist between Alaskan physicians' knowledge and attitudes regarding palliative care and their behaviors regarding palliative care?

$H_0 1$: There is no relationship between the physician's knowledge, attitudes, and behaviors regarding palliative care.

$H_a 1$: There is a significant positive relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care.

In addition, this study compared two subpopulations, Alaskan physicians practicing in urban and in rural areas (IVs), on their knowledge, attitudes, and behaviors (DVs) regarding palliative care. The second research question and related hypotheses were as follows:

RQ2: Is there a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care?

$H_0$2: There is no statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

H_a2: There is a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

Multiple regression analysis was employed for *RQ1* and one-way MANOVA for *RQ2*. The following is a discussion of the study's actual recruitment, response rates, and data collection. Also presented are baseline descriptive and demographic characteristics of the sample, testing of parametric assumptions, and results of hypothesis testing for each research question. This chapter concludes with a summary of the findings.

Data Collection

Surveys were collected between September and October of 2018. Participants were recruited using the 2017 roster of licensed physicians practicing in Alaska as identified by the State of Alaska Department of Commerce, Community and Economic Development: Corporations, Business and Professional Licensing (2017). Of the 4,500 (*N*) physicians on the roster, 854 (*n*) physicians met the vetting process of being currently licensed and practicing in the state of Alaska. Of these 854, 684 (80%) physicians practiced in urban areas and 170 (20%) practiced in rural areas. There was an initial response of 94 surveys within the first 2 weeks. The study's sample size exceeded the minimum number of 75 participants needed, based on *a priori* alpha, power, and effective size identified in Chapter 3. Survey collection continued for another 8 weeks to ensure inclusion of physicians who took the time to complete and return the 52-question survey. A total of 133 (*N*) surveys were returned. Of these, 95 (*n*) were from urban areas and 38 (*n*) were from rural areas.

There were several discrepancies noted in the sampling process. The assumption was that this database was up-to-date, reflecting accurately physicians who were actively practicing in the state of Alaska. As it turned out, the postal service returned 83 as incorrectly addressed, and 10 physicians returned the survey stating they were retired or that their field of medicine did not deal with palliative care patients.

External Validation

This study involved physicians licensed and practicing in the state of Alaska. Review of the state of Alaska physicians' licensing roster of all practicing physicians in Alaska revealed that physicians might be licensed in Alaska but not have an Alaskan address. This precluded verification that the physician currently practiced in the state. Hence, the vetting process included identifying physicians who used an Alaskan address on the state's licensing roster. Of that population, 20% were randomly selected; 854 survey packets were mailed to qualified participants. Of those, 72% submitted completed surveys (see Figure 1).

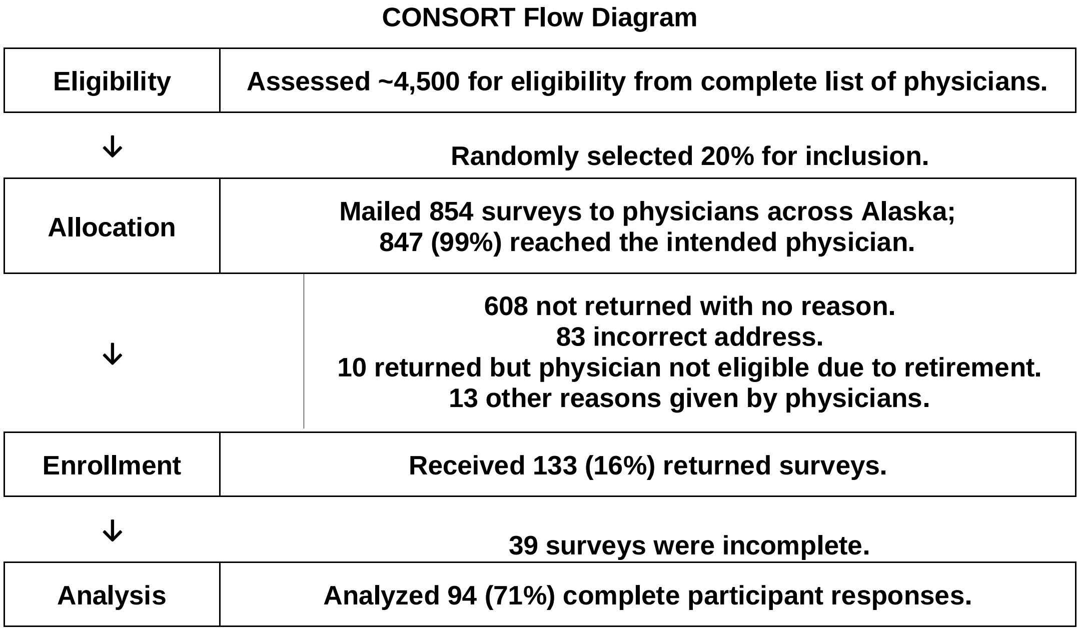

Figure 1. CONSORT Flow Diagram for the univariate analysis that justifies inclusion of covariates.

Demographic Characteristics

The demographic characteristics analyzed included gender, age, and years of clinical experience. Approximately two-thirds (66.2%) of the participants were men (see Table 2), 91.6% were over the age of 45 (see Table 3), and 92.5% had 16 or more years of clinical experience (see Table 4). Three participants did not indicate their gender (see Table 2), and one did not provide an age (see Table 3). Table 5 depicts the physicians' reported number of patients treated until demise. Most physicians (55%) treated 36 or more such patients. Next most frequent was 1 to 5 patients (18%), followed by 31 to 35 (11%), 6 to 10 and 11 to 15 (each 3%), and 21 to 25 and 26 to 30 (both 1%). Table 5 also depicts the number of patients treated by region (urban and rural).

Table 2

Physicians' Gender

Gender	*F*	%	Valid %
Male	86	64.7	66.2
Female	44	33.1	33.8
Subtotal	130	97.7	100.0
Missing	3	2.3	
Total	133	100.0	

Table 3

Physicians' Age

Age bracket	*f*	%	Valid %	Cumulative %
25-35	1	.8	.8	.8
36-45	10	7.5	7.6	8.3
46-55	36	27.1	27.3	35.6
56-65	42	31.6	31.8	67.4
66-75	37	27.8	28.0	95.5
76 or older	6	4.5	4.5	100.0
Subtotal	132	99.2	100.0	
Missing	1	.8		
Total	133	100.0		

Table 4

Physicians' Years of Experience

Years of experience	*f*	%	Cumulative %
1-5	2	1.5	1.5
6-10	2	1.5	3.0
11-15	6	4.5	7.5
16-20	23	17.3	24.8
21-25	21	15.8	40.6
26-30	17	12.8	53.4
31-35	27	20.3	73.7
36 or more	35	26.3	100.0
Total	133	100.0	

Table 5

Physicians' Reported Number of Patients Treated Until Demise

Number of patients treated	Urban (*N* = 95)		Rural (*N* = 38)		Total (*N* = 133)	
	n	%	*n*	%	*n*	%
1-5	17	18	7	19	24	18
6-10	4	4	0	0	4	3
11-15	1	1	3	7	4	3
16-20	10	9	2	4	12	9
21-25	1	1	0	0	1	1
26-30	1	3	0	0	1	1
31-35	7	7	7	19	14	11
36+	54	57	19	51	73	55

Baseline Descriptive Statistics

The Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020; Appendix D) consists of three separate scales that were used to measure the variables of knowledge, attitudes, and behaviors. The mean response (*M*) was computer for knowledge, attitudes, and behaviors questions. Table 6 reflects the descriptive statistics of Alaskan physicians' overall knowledge, attitudes, and behaviors regarding palliative care.

Table 6

Descriptive Statistics of Alaskan Physicians' Overall Knowledge, Attitudes, and Behaviors Regarding Palliative Care

Variable (*N* = 133)	Minimum score	Maximum score	*M* score	Score *SD*	Skewness		Kurtosis	
					Statistic	*SE*	Statistic	*SE*
Knowledge	3.00	29.00	23.15	3.46	-1.946	.210	8.300	.417
Attitudes	1.00	6.00	2.42	.98	.707	.210	.528	.417
Behaviors	1.50	4.00	3.07	.63	-.488	.210	-.444	.417

Knowledge

Participants' knowledge scores were calculated from the PEACE-Q survey (Yamamoto et al., 2013). The PEACE-Q is a 33-item True/False questionnaire that assesses physicians' knowledge of palliative care. Scoring assigns 0 for a False response or 1 for a True response. To maintain the original interpretation of scores, the knowledge score was computed by the total number of correct True/False responses. Participants' scores on the PEACE-Q assessment ranged from 3.00 to 29.00 (*M* = 23.15, *SD* = 3.46). Figure 2 shows the distribution of percentage correct on the knowledge portion of the survey. The lowest score possible was 0 with the highest score being 100%. Alaskan physicians scored from 52% to 85% with the mean being between 70% and 73%.

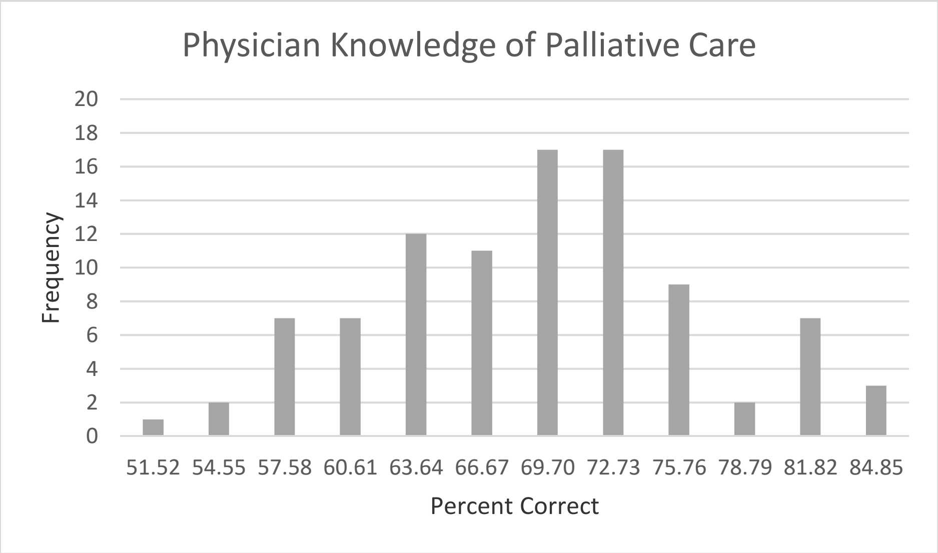

Figure 2. Distribution of percentage of correct responses on the knowledge portion of the survey. *N* = 133.

The knowledge portion of the survey covered nine domains: (a) philosophy of palliative care, (b) cancer pain, (c) side effects of opioids, (d) dyspnea, (e) nausea and vomiting, (f) psychological distress, (g) delirium, (h) communication regarding palliative care, and (i) community-based palliative care (Yamamoto et al., 2013). In the first domain, the philosophy of palliative care, the average score was 63%. The cancer pain domain had an average score of 65%. The domain of the side effects of opioids had an average score of 68%. Domains of dyspnea and nausea had average scores of 75% and 93% respectively. The domain on psychological distress scores averaged 90%. Communicating regarding palliative care domain average scores were 48%. The last domain on community palliative care's average score was 36%. Table 7 depicts participants' descriptive statistics on the individual knowledge questions and scores.

Table 7

Descriptive Statistics on Individual Questions for Knowledge

Knowledge domain & survey question	T/F	*N*	Min	Max	*M*	*SD*
Philosophy of palliative care						
1. Palliative care is synonymous with terminal care.	F	133	.00	1.00	.27	.45
2. In the United States, 50% or less of the general population believe that, if they have cancer, they want to feel secure about receiving cancer treatment and living without severe pain.	T	133	.00	1.00	.92	.28
3. The total consumption of opioids for pain is more in the United States than other countries.	T	133	.00	1.00	.71	.45
Cancer pain						
4. When cancer pain is severe, one of the third-step drugs of WHO's Pain Relief Ladder is used as an initial analgesic.	T	133	.00	1.00	.99	.09
5. When opioids are initially prescribed, all non-analgesics should be discontinued.	T	133	.00	1.00	.65	.48
6. Morphine is used safely in a patient with renal failure.	F	133	.00	1.00	63	.48
7. The rescue dose of opioid is 5% of the daily dose.	F	133	.00	1.00	.26	.44

(table continues)

Knowledge domain & survey question	T/F	*N*	Min	Max	*M*	*SD*
8. Because the tolerance does not occur for opioid-induced nausea, antiemetic should be prescribed for all patients.	F	133	.00	1.00	.90	.30
9. Total dose of daily opioids increases by 10% if pain is unpalliated.	F	133	.00	1.00	.32	.47
10. Opioid rotation or switching should be considered when it is difficult to increase the dose of opioids due to adverse effects.	T	133	.00	1.00	58	.50
11. About 10% of the patients with controlled baseline pain have breakthrough pain.	F	133	.00	1.00	.72	.45
12. Invasive dental procedures should be avoided during bisphosphonate treatment.	T	133	.00	1.00	.77	.42
Side effects of opioids						
13. Opioid-induced nausea and/or vomiting occur in 80% or more patients taking opioids.	F	133	.00	1.00	.56	.50
14. It is necessary to use a laxative together with oral opioids, because most patients who take opioids experience constipation.	T	133	.00	1.00	.80	.40
15. Opioids cause addiction in 0.2% or less of cancer patients under careful monitoring.	T	133	.00	1.00	.68	.47
Dyspnea						
16. If a patient has dyspnea, the PaO_2 of the patient is under 60 Torr.	F	133	.00	1.00	.80	40
17. Morphine is effective for dyspnea.	T	133	.00	1.00	.79	.41
18. If room air temperature is maintained higher (hot), a **p**atient with dyspnea often experiences relief.	F	133	.00	1.00	.65	.48
Nausea and vomiting						
19. The neurotransmitters in the vomiting center are dopamine, histamine, acetylcholine, and serotonin.	T	133	.00	1.00	.91	.29
20. When the primary cause of nausea is hypercalcemia, the administration of bisphosphonate is useful treatment for alleviating nausea.	T	133	.00	1.00	.98	.12
21. Prochlorperazine sometimes causes akathisia.	T	133	.00	1.00	.89	.31
Psychological distress						
22. When a patient has a high level of psychological distress, clinicians are recommended to examine whether the patient has suicidal ideation.	T	133	.00	1.00	.89	.31
23. When the patient has suicidal ideation, psychiatric consultation is recommended.	T	133	.00	1.00	.95	.22
24. An anxiolytic is one of the useful medications for patients with psychological distress.	T	133	.00	1.00	.86	.35

(table continues)

Knowledge domain & survey question	T/F	*N*	Min	Max	*M*	*SD*
Delirium						
25. Delirium occurs due to drugs or physical etiologies.	T	133	.00	1.00	.96	.19
26. Benzodiazepines should be the first for delirium.	F	133	.00	1.00	.96	.19
27. It is better to make the room pitch black for a patient with delirium, so that he or she can sleep well.	F	133	.00	1.00	.97	.17
Communication						
28. An open-ended question means that it cannot be answered with a simple 'yes' or 'no,' and requires an unrestricted answer based on the subject's own feelings.	T	133	.00	1.00	.73	.45
29. When physicians convey bad news, they should the patient's concern and understanding about the disease.	T	133	.00	1.00	.66	.47
30. It is better to repeatedly use the word 'cancer' when telling the patient about his or her malignancy.	F	133	.00	1.00	.07	.25
Community-based palliative care						
31. There is a consultation support center in all designated cancer centers.	T	133	.00	1.00	.54	.50
32. All terminally ill cancer patients 40 years of age can access long-term care insurance.	T	133	.00	1.00	.00	.00
33. All designated clinics with home hospice function have a 24-hour 7-day system.	T	133	.00	1.00	.54	.50

Note: T/F = True or False correct answer; Min = Minimum; Max = Maximum.

Attitudes

The attitudes score was derived from a 7-question, 7-item Likert scale (the TS; Merrill et al., 1998), measuring physicians' attitudes regarding caring for the dying, with higher scores indicating stronger negative attitudes toward carrying for dying patients. The responses on the first two questions for attitudes ranged from 1 to 7, whereas the responses on the remaining five questions ranged from 1 to 6. Using the original interpretation method identified earlier, participants' attitudes scores ranged from 1.00 to 6.00 (*M* = 2.32, *SD* = 0.98) as no participant selected 7 in the Likert scale. The responses were averaged due to the nature of the Likert scale items. Taking the mean of the responses allows for the resulting value to be interpreted easily, as it then corresponds to the same range as the original items. It was deemed appropriate to include the two 7-point

Likert scale items, as no participant selected 7. Thus, the effective range for these two items mirrored the range for the remaining five questions, which used a 6-point Likert scale. Additionally, reliability of the scale was tested for internal consistency. The Cronbach's alpha was .908, indicating excellent reliability. Table 8 depicts participants' descriptive statistics on the individual attitudes questions and scores. Figure 3 illustrates the distribution of attitudes scores on seven statements using a 7-item Likert scale (maximum score is 49). Higher scores indicate stronger negative attitudes toward caring for dying patients.

Table 8

Descriptive Statistics on Individual Questions for Attitudes

Attitudes domain & survey question	*N*	Min	Max	*M*	*SD*
34. Dying patients make me feel uneasy.	133	1.00	7.00	2.94	1.53
35. I feel pretty helpless when I have terminal patients on my ward.	130	1.00	7.00	2.44	1.19
36. It is frustrating to have to continue talking with relatives of patients who are not going to get better.	133	1.00	6.00	2.33	1.22
37. Managing dying patients traumatizes me.	133	1.00	6.00	2.40	1.15
38. It makes me uncomfortable when a dying patient wants to say goodbye to me.	132	1.00	6.00	1.92	1.14
39. I don't look forward to being the personal physician of a dying patient.	132	1.00	6.00	2.83	1.69
40. When patients begin to discuss death, I feel uncomfortable.	133	1.00	6.00	2.05	1.16

Note: Min = Minimum; Max = Maximum.

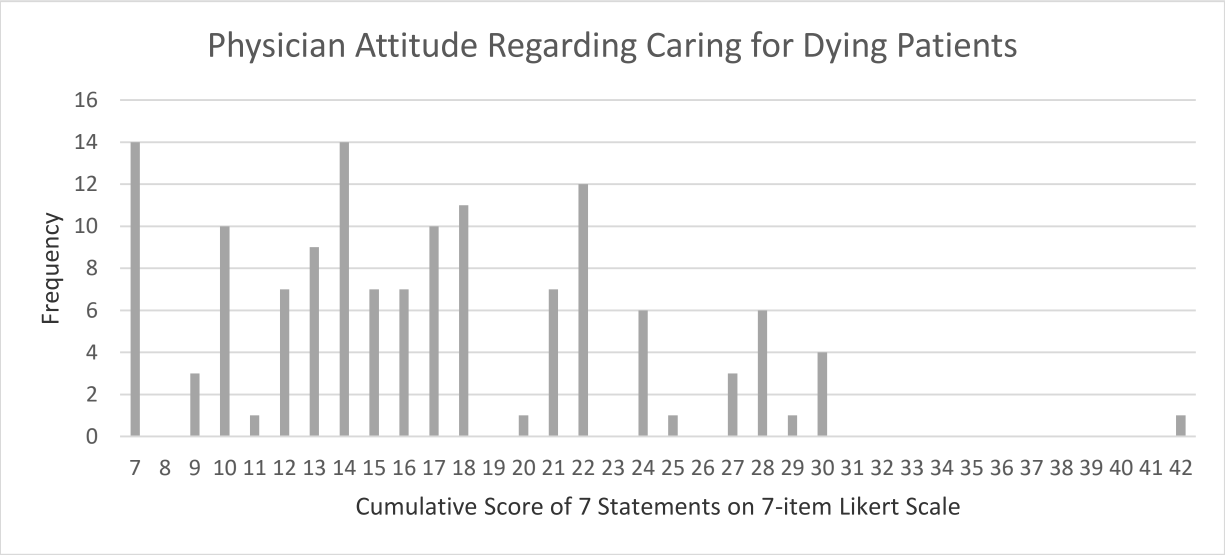

Figure 3. Distribution of attitudes scores on 7-item Likert scale. Maximum score was 49. Higher scores indicate stronger negative attitudes toward caring for dying patients. *N* = 133.

Behaviors

The behaviors score was derived from the PCSE (Phillips et al., 2011b), a 12-question, 4-item Likert scale measuring physicians' behaviors regarding palliative care. The 12 questions measured behaviors, with each question's response ranging from 1 to 4. Behaviors scores ranged from 1.50 to 4.00 (*M* = 3.07, *SD* = 0.63), as no participant chose 1 on the 4-point Likert scale. Again, the mean was calculated so that the resulting value could be interpreted more easily, on the same range as for the original items. Table 9 depicts participants' descriptive statistics on the individual behaviors questions and scores. Figure 4 illustrates the distribution of behaviors scores on the 12-question, 4-item Likert scale (maximum score 48). Higher scores indicate confidence in performing psychosocial support and symptom management.

Table 9

Descriptive Statistics on Individual Questions for Behaviors

Behaviors domain & survey question	*N*	Min	Max	*M*	*SD*
41. Answering patient's questions about the dying process	133	1.00	4.00	3.08	.94
42. Supporting the patient or family member when they become upset	133	1.00	4.00	3.27	.81
43. Informing people of support services available	133	1.00	4.00	2.70	1.03
44. Discussing different environmental options (e.g. hospital, home, family)	133	1.00	4.00	2.96	1.00
45. Discussing patient's wishes for after their death	131	1.00	4.00	3.22	.96
46. Answering queries about the effects of certain medications	133	1.00	4.00	3.27	.85
47. Reacting to reports of pain from the patient	133	1.00	4.00	3.39	.76
48. Reacting to and coping with delirium	133	1.00	4.00	2.66	.90
49. Reacting to and coping with terminal dyspnea (breathlessness)	133	1.00	4.00	2.80	.96
50. Reacting to and coping with nausea/vomiting	133	1.00	4.00	3.16	.81
51. Reacting to and coping with reports of constipation	133	1.00	4.00	3.38	.71
52. Reacting to and coping with limited patient decision-making capacity	133	1.00	4.00	2.99	.93

Note: Min = Minimum; Max = Maximum.

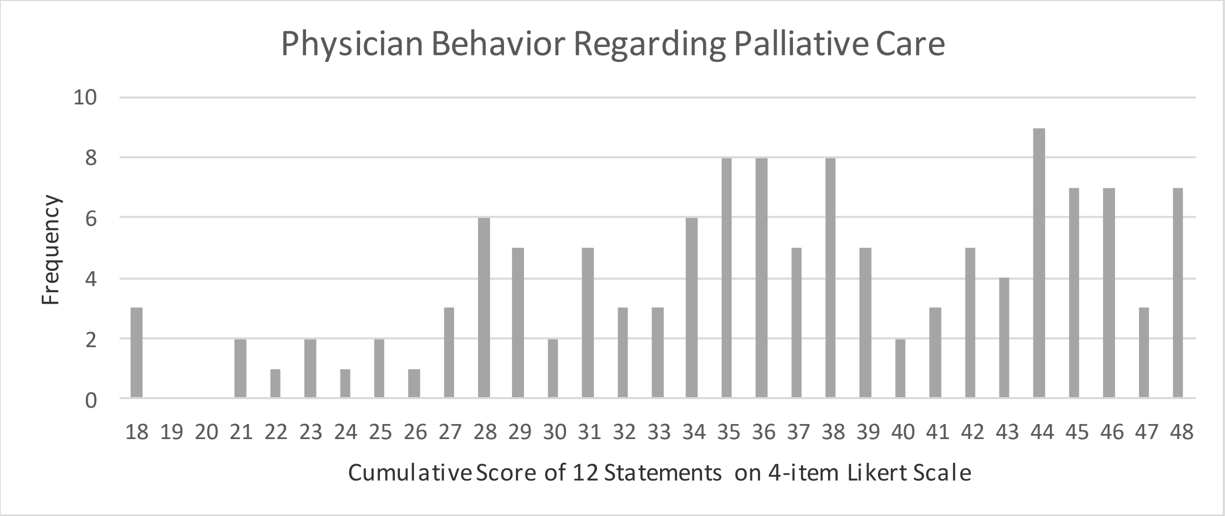

Figure 4. Distribution of behavior scores on 4-item Likert scale. The self-rating behavior scale was 1 = Need further basic instruction; 2 = Confident to perform with close supervision/coaching; 3 = Confident to perform with minimal consultation; 4 = Confident to perform. Maximum score was 48. Higher scores indicate confidence in performing psychosocial support and symptom management. *N* = 133.

Assumptions

To assess the validity of performing the multiple regression analysis discussed later in this chapter, statistical assumptions were evaluated. Assumptions tested included skewness and kurtosis, as well as the normality of the data. All skewness and kurtosis values were within acceptable ranges (i.e., no values were beyond the ±3 standard deviations threshold), indicating no violations of normality (see Table 6). Normal univariate distribution expects values of asymmetry and kurtosis to be between -2 and 2. Scores of -3 and below or 3 and above would indicate that the data did not follow a normal univariate distribution (George & Mallery, 2010). Skewness and kurtosis statistics indicated a normal distribution of the data. Additionally, Q-Q plots for knowledge, attitudes, and behaviors suggest approximate normality of the data with no severe violations (Figures 5 through 7). Outliers were assessed by transforming the study variables to standardized scores. For attitudes, standardized scores ranged from -1.45 to 3.65; for behaviors, standardized values ranged from -2.50 to 1.47. Almost all values were within an acceptable range of ±3 standard deviations. Only one value in the attitudes scores had a standardized value of 3.65; that one value was removed from the analysis.

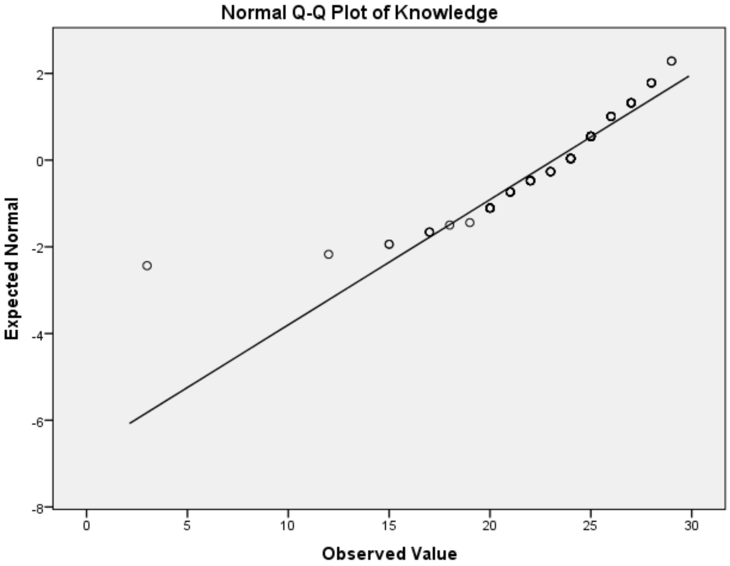

Figure 5. Normal Q-Q plot of knowledge scores.

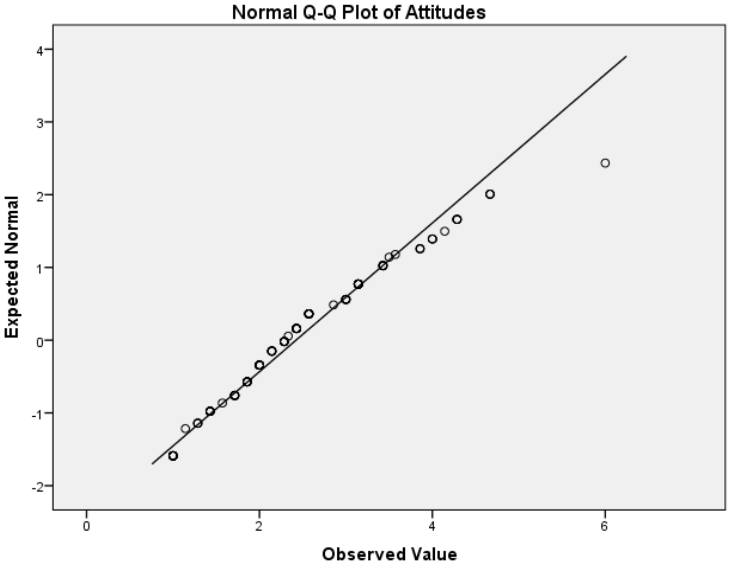

Figure 6. Normal Q-Q plot of attitudes scores.

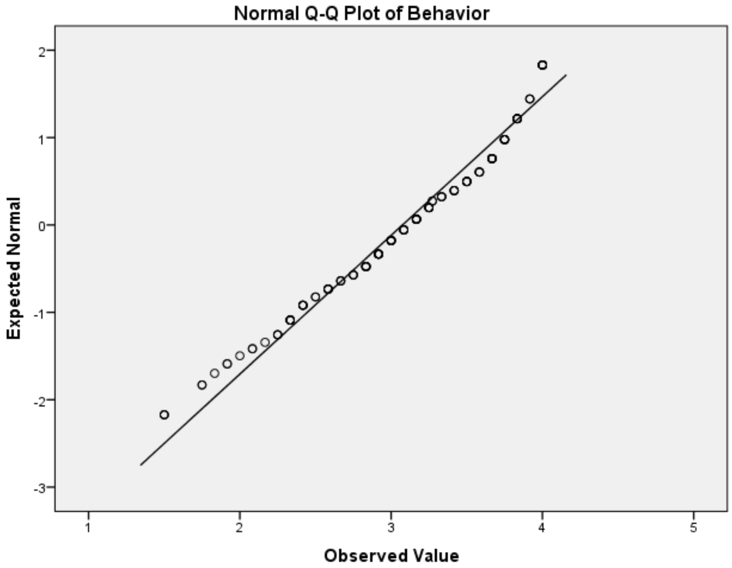

Figure 7. Q-Q plot of behaviors scores.

Missing Data

Some participants did not provide a response to some demographic and Likert-response questions. Consequently, an analysis was conducted using listwise deletion with SPSS. In listwise deletion, a case is dropped from an analysis if it has a missing value for at least one of the specified variables. The analysis is run only on cases that have a complete set of data. Accordingly, listwise deletion performed by SPSS yielded 130 complete cases for analysis.

Results

This section describes the results of the statistical analyses performed for each research question and corresponding hypotheses.

RQ1

Multiple regression analysis was utilized in order to address the first research question and its related hypotheses:

RQ1: Does a relationship exist between Alaskan physicians’ knowledge and attitudes regarding palliative care and their behaviors regarding palliative care?

$H_0$1: There is no relationship between the physicians’ knowledge, attitudes, and behaviors regarding palliative care.

H_a1: There is a significant relationship between physicians’ knowledge, attitudes, and behaviors regarding palliative care.

Prior to conducting the regression analysis, the relevant statistical assumptions were tested. These assumptions included (a) linearity, as assessed by a plot of standardized residuals against the predicted values; (b) independence of residuals, as assessed by Durbin-Watson statistics; (c) homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values; (d) multicollinearity, as assessed by variance inflation factors (VIFs); (e) outliers, as assessed by studentized residuals greater than ±3 standard deviations, leverage values greater than 0.2, and values for Cook's distance above 1; and (f) normality, as assessed by the visual inspection of the P-P plot.

Linearity was assessed by inspecting a plot of standardized residuals against the predicted values. Figure 8 depicts the scatterplot of the residuals. A Durbin-Watson statistic of 1.546 was within the acceptable range of 1.5 to 2.5, which indicates independence of residuals, resulting in a lower band of linearity. Figure 8, in spite of lack of clearly horizontal banding pattern, demonstrated VIFs suggesting homoscedasticity (with VIFs ranging from 1.000 to 1.060). No standardized residuals fell outside ±3 standard deviations; one multivariate outlier had leverage value above 0.2. There were no

Cook's distances above 1, indicating no influential points. This one multivariate outlier, as assessed by the high leverage value, was removed from the analysis. Normality was assessed by visual inspection of a P-P plot, which indicated no violation of the normality assumption, as depicted by its approximate path along the diagonal (see Figure 9).

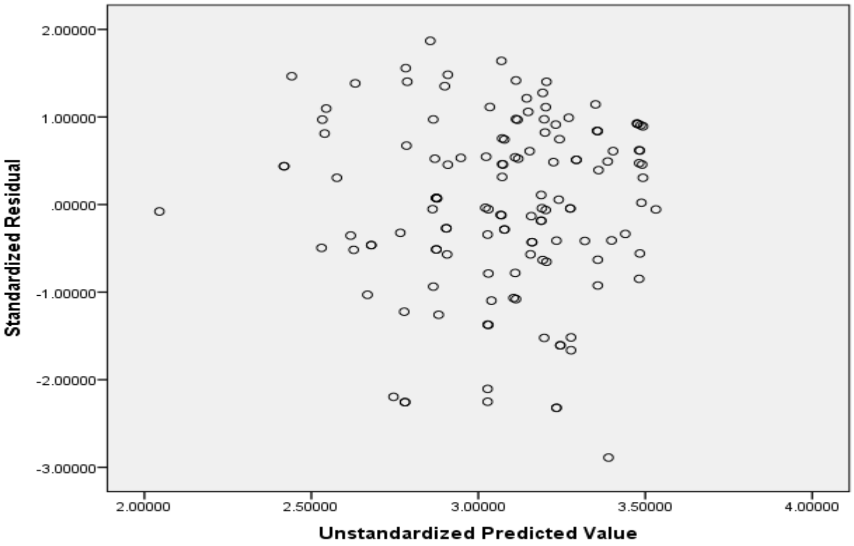

Figure 8. Scatterplot of unstandardized predicted and standardized residuals (*RQ1*).

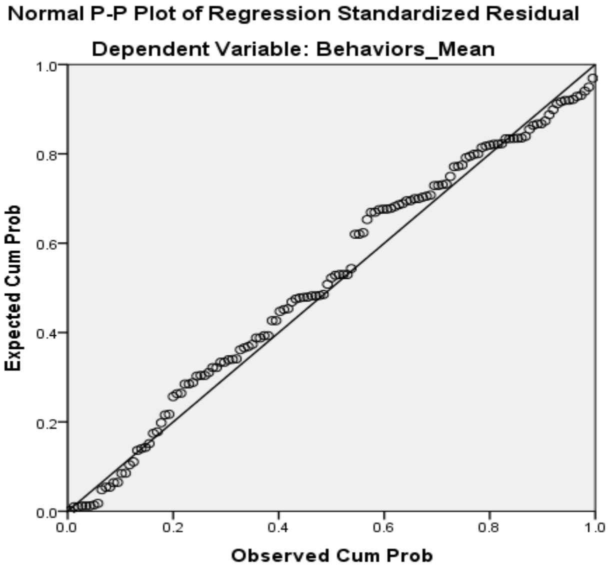

Figure 9. P-P plot for multiple regression (RQ1).

A regression model was built in SPSS which included the DV, Alaskan physicians' behaviors scores, and the IVs: knowledge and attitudes scores. The regression model explained 16.3% of the variance in predicting Alaskan physicians' behaviors from their knowledge and attitudes scores ($R_{adj} = 0.163$). The overall model was found to be significant, $F(2, 129) = 13.521$, $p < .001$. Attitudes was found to be a significant predictor of behaviors ($B = -.283$, $t = -5.045$, $p < .001$). Knowledge was not found to be significant ($B = .001$, $t = .028$, $p = .977$). A one unit increase in the attitudes assessment score, on average, results in a decrease in behavior score by 0.283 while holding other IV constant (see Tables 10 and 11). Based on these results, there is a partial rejection of the null hypothesis for RQ1. Once the analyses for RQ1 were completed, the analyses for RQ2 were performed. For RQ2, a MANOVA was performed.

Table 10

RQ1 ANOVA

	SS	*df*	*MS*	*F*	Sig.
Regression	8.897	2	4.448	13.531	<.001b
Residual	41.785	127	.329		
Total	50.682	129			

Note. Dependent variable (DV) is Behaviors. Predictors are (Constant), Knowledge, and Attitudes.

Table 11

Coefficients

	Unstandardized coefficients		Standardized coefficients			Collinearity Statistics	
Predictors	B	*SE*	β	*t*	Sig.	Tolerance	VIF
(Constant)	3.747	.481		7.783	<.001		
Knowledge	.001	.018	.002	.028	.977	.962	1.039
Attitudes	-.283	.056	-.418	-5.045	<.001	.962	1.039

RQ2

RQ2 examined the between-group mean differences in knowledge, attitudes, and behaviors between urban and rural physicians. A one-way MANOVA was conducted to answer RQ2.

RQ2: Is there a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care?

$H_0 2$: There is no statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

$H_a 2$: There is a statistically significant difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care.

Descriptive statistics. Descriptive statistics of participants' knowledge, attitudes, and behaviors scores were computed by urban and rural regions (see Table 12).

Table 12

Knowledge, Attitudes, and Behaviors Scores by Region

Variable	Region	*M*	*SD*
Knowledge	Urban	23.22	3.06
	Rural	22.97	4.35
Attitudes	Urban	2.44	0.97
	Rural	2.38	1.02
Behaviors	Urban	2.97	0.64
	Rural	3.33	0.52

For knowledge scores, participants' raw scores in the urban region were higher (*M* = 23.22, *SD* = 3.06) than the rural region (*M* = 22.97, *SD* = 4.35). Standardized knowledge scores ranged from -2.78 to 1.90. Attitudes scores ranged from -1.47 to 2.29. For attitudes scores, raw scores of participants in the urban region were higher (*M* = 2.44, *SD* = 0.97) than the rural region (*M* = 2.38, *SD* = 1.02). Behaviors scores ranged from -2.49 to 1.47. For behaviors scores, the rural region's participants' raw scores were higher (*M* = 3.33, *SD* = 0.52) than those in the urban region (*M* = 2.97, *SD* = 0.64).

Assumption testing. Next, statistical assumptions for a MANOVA were evaluated. These evaluations included tests for normality, outlier detection, multicollinearity, linearity, and homogeneity of variances. The assumption of normality was assessed by inspection of skewness and kurtosis statistics. Normality of scores separated by urban and rural groups was satisfied as assessed by kurtosis and skewness statistics within ±3 (Tables 13 and 14). Additionally, there were no standardized values that were extreme, suggesting no outliers of concern.

Table 13

Skewness and Kurtosis for Urban Physicians

Variable	Pr(Skewness)	Pr(Kurtosis)	χ^2 (2)	Prob > χ^2
Knowledge	0.0428	0.9595	4.25	0.1197
Attitudes	0.6082	0.1304	2.74	0.254
Behaviors	0.0072	0.2925	7.37	0.0251

Table 14

Skewness and Kurtosis for Rural Physicians

Variable	Pr(Skewness)	Pr(Kurtosis)	χ^2 (2)	Prob > χ^2
Knowledge	0.1005	0.0315	6.77	0.034
Attitudes	0.0005	0.053	13.12	0.0014
Behaviors	0.2618	0.2465	2.68	0.2624

Multicollinearity and linearity were assessed next. Multicollinearity in MANOVA refers to the relationship among the three DVs: knowledge, attitudes, and behaviors. The DVs should correlate moderately with one another (Laerd Statistics, 2018). There was no multicollinearity, as assessed by Pearson correlation (r = -0.477, p = < .001) between attitudes and behaviors. Additionally, the VIF was 1.633, which was below the threshold value of 5.0 to assess multicollinearity. The DVs in MANOVA should correlate moderately with one another; otherwise, it is inappropriate to perform MANOVA (Laerd Statistics, 2018). Since knowledge did not correlate significantly with behaviors (r = .102, p = .25) nor attitudes (r = -.237, p = .037), an independent *t*-test on knowledge was performed separately, to assess the differences in knowledge based on region. The assumption of linearity (another assumption of MANOVA; Laerd Statistics, 2018) was assessed between the DVs of attitudes and behaviors for urban and rural groups via visual inspection of scatterplots. Both scatterplots suggested a negative linear relationship between attitudes and behaviors (see Figures 10 and 11).

The homogeneity of variances assumption was then tested. There was homogeneity of variance-covariances matrices, as assessed by a nonsignificant Box's test of equality of covariance matrices (p = .394). As this was the final assumption evaluated, the analyses continued next with a MANOVA.

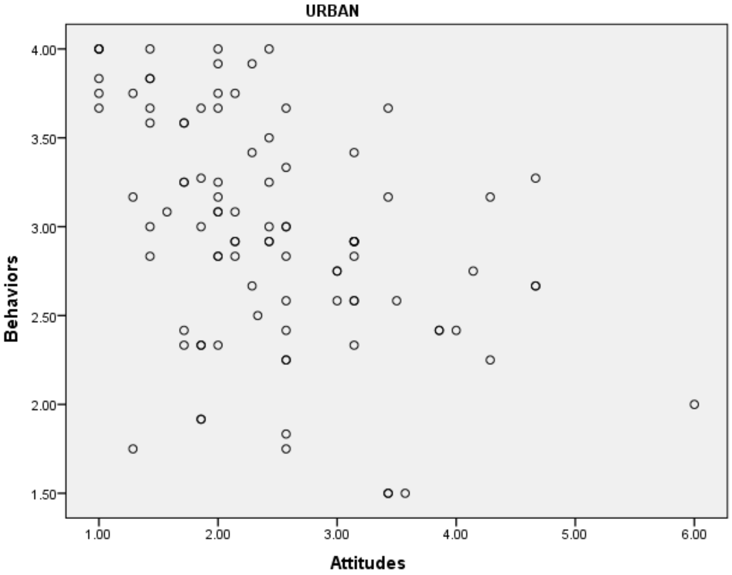

Figure 10. Scatterplot of attitudes and behaviors scores for urban physicians.

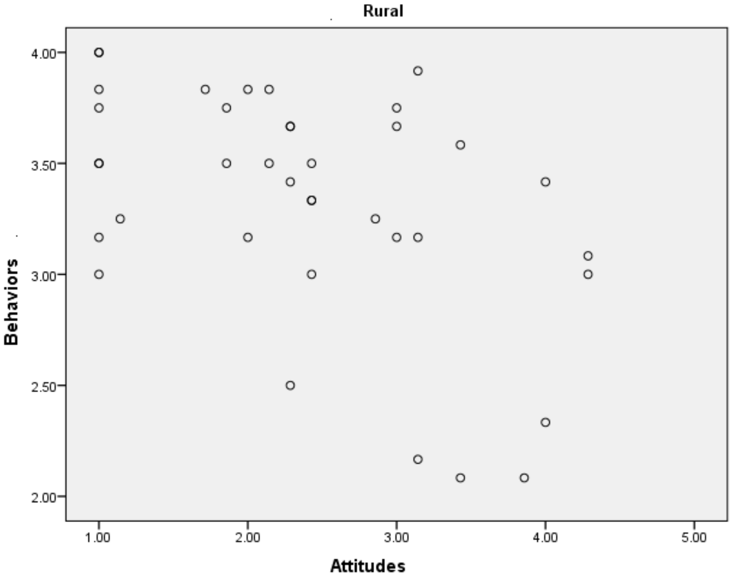

Figure 11. Scatterplot of attitudes and behaviors scores for rural physicians.

Assessing Knowledge Scores Based on Region

Knowledge did not correlate significantly with attitudes or behaviors. Therefore, an independent *t*-test was performed to determine if there were statistically significant between-group mean differences in knowledge scores based on region (urban or rural). The independent *t*-test was not significant, *t*(131) = 0.371, *p* = 0.711. The mean knowledge score of physicians living in an urban area (*M* = 23.22, *SD* = 3.06) was not significantly different from other physicians living in a rural area (*M* = 22.97, *SD* = 4.35). The difference in mean knowledge between urban and rural regions was not found to be statistically significant, 95% CI [-1.07, 1.57]. Table 15 depicts this information.

Table 15

Knowledge Scores

Region	*n*	*M*	*SD*	*SEM*
Urban	95	23.22	3.06	.31
Rural	38	22.97	4.35	.71

Results of MANOVA and Post Hoc Tests of Attitudes and Behaviors

Table 16 depicts the results of the multivariate tests of MANOVA. There was a statistically significant difference between the regions on the combined DVs of attitudes and behaviors: *F*(2, 130) = 5.224, *p* = .007; Wilks' Λ = .0.926; partial η_2 = .074.

Due to the statistically significant MANOVA result, post hoc tests were conducted to determine which DV appeared to be contributing to the statistically significant MANOVA. There was a statistically significant difference in behavior scores between the urban and rural regions, *F*(1, 131) = 3.433, *p* = .003; partial η_2 = .066. Table 17 provides this information. Since knowledge did not correlate significantly with the other two DVs, a between-groups independent *t*-test was performed on knowledge (see

Tables 16 and 17). As attitudes and behaviors correlated significantly, the results of these tests were not examined separately, as the results could not be examined independently.

Table 16

MANOVA Multivariate Tests for the Combined Variables of Attitudes and Behaviors by Region Type

Effect	Value	*F*	Hypothesis *df*	Error *df*	Sig.	Partial ε_2	Observed power
Intercept							
Pillai's V	.979	2996.317	2.000	130.000	.000	.979	1.000
Wilks's Λ	.021	2996.317	2.000	130.000	.000	.979	1.000
Hotelling's T_2	46.097	2996.317	2.000	130.000	.000	.979	1.000
Roy's Θ	46.097	2996.317	2.000	130.000	.000	.979	1.000
Region							
Pillai's V	.074	5.224	2.000	130.000	.007	.074	.824
Wilks's Λ	.926	5.224	2.000	130.000	.007	.074	.824
Hotelling's T_2	.080	5.224	2.000	130.000	.007	.074	.824
Roy's Θ	.080	5.224	2.000	130.000	.007	.074	.824

Table 17

Tests of Between-Subjects Effects

Source	DV	Type III SS	*Df*	*MS*	*F*	Sig.	Partial ε_2	Observed power
Corrected model	Attitudes	.118	1	.118	.122	.727	.001	.064
	Behaviors	3.433	1	3.433	9.192	.003	.066	.853
Intercept	Attitudes	630.017	1	630.017	653.108	.000	.833	1.000
	Behaviors	1078.064	1	1078.064	2886.034	.000	.957	1.000
Region	Attitudes	.118	1	.118	.122	.727	.001	.064
	Behaviors	3.433	1	3.433	9.192	.003	.066	.853
Error	Attitudes	126.368	131	.965				
	Behaviors	48.934	131	.374				

Summary

Multiple regression analysis and one-way MANOVA were conducted to assess the relationship between Alaskan physicians' knowledge and attitudes regarding palliative care and their behaviors regarding palliative care, and to determine if these participants' knowledge, attitudes, and behaviors differed between urban and rural physicians. Multiple regression analysis was conducted for *RQ1*. Parametric testing of assumptions for multiple regression was conducted which established the residuals were normally distributed, no multicollinearity, homoscedasticity satisfied, and linearity between the IVs and DV. One multivariate outlier was removed. Results identified a statistically significant negative relationship between attitudes and behaviors, and no significant correlation with knowledge.

To evaluate *RQ2*, a one-way MANOVA was run. Physicians were categorized into two different regional categories based on the location of their practice, urban or rural. Preliminary assumption checking revealed that data were normally distributed, as assessed by skewness and kurtosis statistics; there were no extreme outliers, as assessed by standardized values; there were linear relationships, as assessed by scatterplots; no multicollinearity; and there was homogeneity of variance-covariance matrices, as assessed by Box's M test. Between-group differences were statistically significant. Follow-up univariate ANOVAs showed that behavior was significantly different statistically between rural and urban regions. Post hoc testing showed that for behavior scores, the rural region scores were greater than those in the urban region. Additionally, an independent *t*-test was conducted to assess between-group differences in physicians' knowledge regarding palliative care. Results showed that there were no statistically significant between-group differences.

Chapter 5 provides discussion of the study’s findings and how the findings relate to similar studies detailed in the literature review. A discussion of the study’s limitations and recommendations for further research is also provided. The chapter concludes with a summary of the study and the contribution to the literature.

Chapter 5: Discussion, Conclusions, and Recommendations

Overview

The purpose of this study was to help fill the gap in research about the knowledge, attitudes, and behaviors of urban and rural Alaskan physicians regarding palliative care. This purpose was accomplished by conducting a nonexperimental, quantitative, multivariable regression analysis of the relationship between Alaskan physicians' knowledge and attitudes (i.e., the IVs) and their behaviors regarding palliative care (i.e., the DV). In addition, this study was designed to determine whether there was a difference between physicians who practice in urban versus rural areas, in their knowledge, attitudes, and behaviors regarding palliative care.

The study was conducted because, despite Alaska having the US's highest-in-the-US-per-capita rates of cancer, heart disease, and chronic pulmonary lung disease, Alaska ranked last in the nation for providing palliative care (Atkins et al., 2017; Jemal et al., 2011; T. C. Lewis et al., 2004; R. S. Morrison et al., 2011; Siegel et al., 2015; C. B. Smith et al., 2011; Torre et al., 2015). In addition, studies have continued to show disparities in access to medical services between those living in urban areas and those living in rural Alaska (Bhaskar & O'Hara, 2017; M. E. Johnson et al., 2006).

Previous research had pointed to the critical need to examine the relationship between physicians' knowledge, attitudes, and behaviors regarding palliative care (Beccaro et al., 2013; Cocconi et al., 2010; Draper et al., 2019; Hirai et al., 2011; Zhou et al., 2010). Further research was also needed to examine the differences between rural and urban physicians' knowledge, attitudes, and behaviors regarding palliative care (Bhaskar

& O’Hara, 2017; Brazil et al., 2014; Brems et al., 2007; Castleden et al., 2010; Downing & Jack, 2012). Hence, this study was unique in that it examined physicians’ knowledge, attitudes, and behaviors regarding palliative care in urban and rural Alaska.

Key Findings

This study’s findings show a statistically significant relationship between Alaskan physicians’ attitudes and behaviors regarding palliative care. There was no statistically significant correlation between Alaskan physicians’ knowledge and behaviors regarding palliative care, nor a significant correlation between Alaskan physicians’ knowledge of and attitudes regarding palliative care. Thus, this study’s first null hypothesis is partially rejected, with the conclusion that there is a significant relationship between Alaskan physicians’ attitudes and behaviors regarding palliative care.

Regarding differences between urban and rural Alaskan physicians, there was a statistically significant difference between urban physicians and rural physicians. Urban physicians scored higher in attitudes regarding palliative care, whereas those practicing in rural areas scored higher in behaviors regarding palliative care. Yet, the scoring difference between urban and rural Alaskan physicians regarding knowledge of palliative care was not statistically significant.

Interpretation of the Findings

Knowledge

In this study, Alaskan physicians demonstrated that their attitudes and behaviors aligned with the philosophy of palliative care, yet they were deficient in their knowledge of symptom management that is instrumental in the quality of the lives of their patients with serious illnesses. The study findings indicated that physicians were proficient in treating some conditions such as dyspnea. This is not surprising in that Alaska has a higher rate of lung disease per capita in the United States (Kinghorn et al., 2018; Melkonian et al., 2019). Also, physicians indicated an understanding of treating nausea and vomiting, two conditions that cause patients with serious conditions great distress (Najafi et al., 2019). The true deficiency in Alaskan physicians' knowledge was in cancer pain.

Cancer patients' primary fear is uncontrolled pain (Paice, 2018). Cancer pain specifically requires the use of opioids. Although this study's findings indicated that physicians were treating the side effects of opioids appropriately, the findings revealed a lack of knowledge associated with the dosages of opioids, leaving a patient either undermedicated or overmedicated. For example, this study's findings indicated that only a small percentage of physicians knew the rescue dose of opioids. Another example was that a majority of physicians did not know the allowable dosage increase of opioids for unpalliated pain. For the patient, being unable to experience pain relief causes unimaginable suffering (Money & Garber, 2018). Uncontrolled pain is cause for hospitalizations for cancer patients, even those who wanted to die at home (Sandgren & Strang, 2018). For rural Alaskans, this hospitalization causes additional economic and psychosocial hardships as it takes the patient away from his or her village.

Alaskan physicians are not alone in lacking knowledge on treating cancer pain. A recent literature review found several reasons physicians were not competent in managing cancer pain. The researchers found inadequate knowledge of assessment tools, organizational factors, heavy workloads and lack of knowledge of pain medications (Kasasbeh, McCabe, & Payne, 2016). In addition, the current zeitgeist of the opioid addiction epidemic has created a cloud of fear of professional ramifications resulting in physicians undermedicating cancer pain patients in fear of the federal regulations (Foxwell, Uritsky, & Meghani, 2019). Yet the WHO's Pain Relief Ladder clearly provides physicians guidelines for managing cancer pain which allow physicians to adequately treat cancer pain and stay within the law (Carlson, 2016). Alaskan physicians in particular face a dilemma in adequately treating pain that requires opioids. Alaska is one of only six of the 50 states with an emergency declaration in response to the opioid epidemic (Rutkow & Vernick, 2017). For physicians, this means additional oversight on opioid prescriptions. Although well intentioned, the emergency declaration has had an unforeseen impact, as physicians have been extraordinarily judicious in prescribing opioids, resulting in undermedication for those patients who need opioids to treat cancer pain (Paice, 2018). This study provides evidence that in the age of the opioid epidemic, Alaskan physicians need training on pain management for patients with serious illnesses such as cancer.

Interestingly, Alaskan physicians broke away from research that demonstrated the state's physicians do not address emotional pain, especially suicidal ideation (Kee, Khoo, Lim, & Koh, 2018). Researchers Kee, Khoo, Lim, and Koh (2018) found that Alaskan physicians had the knowledge that allowed them to recognize and make referrals for patients expressing suicidal ideation. This finding was likely due to Alaska's highest rate of suicide, especially in the Alaska Native population (Leavitt et al., 2018). Kee et al. also found that Alaskan physicians not only recognized suicidal ideation but also knew how to treat it with antidepressants. In addition to psychological distress, Alaskan physicians demonstrated knowledge in recognizing and treating delirium. Delirium, especially at the end stage of disease, causes much distress for both the patient and the family. Physicians able to address these biopsychological symptoms quickly improve the patient's quality of life.

Attitudes

This study examined the attitudes of Alaskan physicians in working directly with patients at the end of life. The participating physicians' responses were overwhelming positive regarding being present with patients and family members during the most difficult stages of a serious illness. The study revealed that, unlike their peers in the literature, participating Alaskan physicians indicated that they do not feel uncomfortable when patients want to talk about death, nor do they feel traumatized when working with dying patients. These findings may be due to three factors revealed in this study: the age of Alaskan physicians; the number of years practicing; and the number of patients treated until their demise. Research indicates that the older the physician, the more skills the physician has in working with patients at the end of life (Jors et al., 2016). Another factor may be that Alaskan physicians treat more patients with serious illnesses per capita than their peers (Jemal et al., 2011; Melkonian et al., 2019; Torre et al., 2015). Paradoxically, despite the experience, Alaskan physicians lack knowledge of symptom control. This reinforces the need for additional training to facilitate physicians' ability to be present for their dying patient and adequately manage patients' pain.

Behaviors

The most interesting and anomalous finding in this study is that, despite Alaskan physicians lacking knowledge of pain management for patients with serious illnesses, their self-reporting of their behaviors indicates high self-efficacy in pain management. This finding means that Alaskan physicians believe they are confident in treating symptoms of patients with serious illnesses, yet they do not know the specifics of pain management (e.g., dosages, management of breakthrough pain, etc.). Paradoxically, the participating physicians accurately reported knowing how to treat dyspnea, yet their self-efficacy in treating dyspnea indicated that they were confident only with close supervision or coaching. This paradox may be indicative of academic knowledge of treating dyspnea but lack of self-efficacy when actually treating a patient.

Research in self-efficacy indicates that the higher a physician's self-efficacy, the more competent the physician feels in improving the quality of life of a patient with a serious illness (Phillips et al., 2011a). This relationship was evident in this study in the sections that measured Alaskan physicians' competency in palliative care domains such as the psychological, social, and spiritual needs of the patient. For example, in the knowledge section of the survey, physicians self-reported the ability to inquire about and address patients' psychologically distressful emotions such as suicidal ideation. Also, in both the knowledge and attitudes sections, participating Alaskan physicians indicated that they felt comfortable caring for a dying patient and the family, thus having the behaviors needed to reduce the patient's suffering. It is clear that Alaskan physicians have the heart of palliative care. Aligning their attitudes and behaviors with the knowledge of treating patients with serious illnesses will truly enable physicians to feel competent in their profession and practice.

Urban and Rural

The delivery of health care in Alaska is unique in that physicians serve patients who live in the geographically largest state in the union (Reunion Technology, 2020). The major medical hospitals that can provide surgeries, chemotherapy, radiation, and so on are located in the urban areas (Kokesh et al., 2011). Thus, rural patients experiencing serious illnesses such as cancer often need to travel to the urban centers for treatment. This means that urban physicians see far more patients with serious illnesses than rural physicians. This was evident in this study, which showed that urban Alaskan physicians had more overall knowledge in treating serious illnesses than their rural colleagues. This also held true in the physicians' attitudes regarding caring for patients with serious illnesses. The urban physicians are more often the ones who provide not only the initial diagnosis but may also be the ones caring for such patients until their demise, despite the rural patients' desires to return home. Thus, the urban physicians in this study demonstrated higher attitude scores than rural physicians.

However, rural physicians departed from urban physicians in having higher scores in behaviors consistent with palliative philosophy. Rural patients will often travel thousands of miles between treatments to be with their social support systems. For the patient with a serious illness, addressing psychosocial and spiritual needs improves overall quality of life. Thus, rural physicians are often the ones treating the patient between surgeries and/or chemotherapy treatments. Rural physicians must have high self-efficacy in believing the level of capacity in treating the patient and the family, as they may not have the luxury to refer their patients to a specialist. The rural physician is in the moment with the patient and needs to be capable in discussing the dying process and/or supporting family members at times of emotional distress.

Palliative Care

This most significant finding of this study was the result on one question: "Palliative care is synonymous with terminal care." The majority (73%) of participating physicians answered "true," indicating that most of these Alaskan physicians thought that palliative care is only for patients with a terminal illness. This finding contradicts the mounting evidence demonstrating that early referrals to palliative care significantly increase quality of life and life expectancy (Hui & Bruera, 2016; Sorensen et al, 2020). In addition, this study revealed that participating Alaskan physicians were not aware of the growing number of palliative care teams in Alaska. Although Alaska still ranks last in availability of palliative care programs, some programs were established during with the conduct of this study (Dumanovsky et al., 2015). In addition, Alaska has developed a statewide palliative care consultation program, discussed further in the recommendations section below.

Theoretical Foundations

The theoretical foundations used for this project were Engel's (1977) biopsychosocial model, Saunders' (1981a) total pain theory, and Bandura's (1977, 1982) theory of self-efficacy. These three theoretical foundations give credence to the necessity to integrate the biopsychosocial and spiritual needs in treating a patient and family experiencing a serious illness. The following sections provide interpretation of the study's findings in relation to each theory.

Biopsychosocial Model

Engel's (1977) biopsychosocial model has become the cornerstone of palliative care (Ng et al., 2016). This study's findings indicate that Alaskan physicians' attitudes and behaviors align with treating the psychosocial needs of the patient and the family. Yet, although Engel (1980) argued that physicians focused too much on the physical manifestations of the disease, this study's findings indicate that Alaskan physicians need to be trained in how to treat these manifestations (e.g., using pain management), to alleviate the psychosocial suffering experienced by the patient.

Total Pain Theory

Total pain theory (Saunders, 1981a) approaches the patient's symptoms from a holistic approach that includes physical, psychological, social, and spiritual aspects of the patient (Saunders, 2006). This study did not address the physician's approach to discussing the patient's spirituality. This study did, however, reveal that Alaskan physicians felt confident in discussing the dying process and the patient's wishes for after death. In addition, the participating physicians' attitudes and behaviors evidenced support for both the patient's and family's psychological and social needs. Regarding physical distress, the Alaskan physicians were congruent in both knowledge and self-efficacy with treating side effects of opioids and dyspnea. Yet, the physicians did lack knowledge in pain management, which has significant negative impacts in the other domains of psychological, social, and spiritual well-being. As the goal of palliative care is for the patient to live life fully throughout the progression of the disease, Alaskan physicians need to learn effective pain management.

Self-Efficacy Theory

Bandura's (1977, 1982) theory of self-efficacy describes the influence of individuals' beliefs in their ability to perform difficult tasks, such as treating a patient with a serious illness. This study revealed an interesting divide between urban and rural physicians regarding knowledge and behaviors in treating such patients and their families. The urban physicians showed high self-efficacy in knowledge. Conversely, the rural physicians showed high self-efficacy in behaviors. Thus, the rural physicians showed high self-efficacy in their behaviors associated with palliative care in communicating effectively with patients regarding end-of-life issues, such as existential fears (Coulourdides Kogan et al., 2015). And although both the urban and rural physicians had knowledge regarding treating some symptoms, such as dyspnea and nausea, both the urban and rural physicians evidenced the need for education on pain management. This finding is congruent with recent research showing that physicians were aware of such incongruences and recognized the need for training (Bateni et al., 2018).

In summary, this study's findings indicate that Alaskan physicians have the attitudes and behaviors, or the heart, of palliative care, but need the knowledge gained through education, training, and experience in palliative care. The next section contextualizes this study's findings by examining the limitations of the study. This discussion includes examination of the demographics of the population, the survey instrument, and the significance of the timing of the study.

Limitations of the Study

Population

This study focused on Alaskan physicians only. It did not include other medical practitioners such as osteopathic (D.O.), family nurse practitioners, or physician assistants who also treat patients with serious illnesses. Including these practitioners would offer a wider sample of those who treat patients with serious illnesses.

Another limitation of this study is that physicians in certain specialties, such as oncologists and surgeons, were not identified. Physicians in certain specialties, such as oncologists, have far more experience in treating patients with serious illnesses than general practictioners. A study that compares the knowledge, attitudes, and behaviors of medical specialties would reveal specific data as to where training is needed most.

Assessment

There is a dearth of instruments that measure physicians' knowledge, attitudes, and behaviors regarding palliative care (Connolly et al., 2018). As a result, this study employed a new survey instrument, the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020), combining three separate instruments that had different measurement scales. The knowledge section of the instrument (PEACE-Q survey; Yamamoto et al., 2013) is a percentile measurement using true/false. The attitudes (the TS; Merrill et al., 1998) and behaviors (PCSE; Phillips et al., 2011b) sections both use Likert scales but with different ranges. This diversity makes the statistical analysis challenging, as none of the participants' responses can be compared directly and using like terms. For instance, the true/false nature of the knowledge items prevents determination of the extent to which a participant possesses knowledge in the same way as one would determine the extent to which specific attitudes or behaviors are present. In mathematical terms, the mean scores for attitudes and behaviors differ significantly from one another and from the true/false measurement of knowledge.

The other limitation of using the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey instrument (Cavalier, 2020; Appendix D) is that is a mail survey. It would be costly to replicate. This alone is a major impediment for replication. However, it could be converted to an online survey or used as pre- and posttest during a face-to-face training.

Timing

Another limitation was the timing of the study. This study was conducted at the apex of the field of palliative care. In the preceding 5 years, there had been a worldwide push toward offering education to physicians, including fellowships in palliative care (Callaway et al., 2018; Ferris et al., 2018). Replication of this study in 5 years may reveal statistically significant differences in the knowledge of Alaskan physicians. Or the survey could be used to gauge the shift in the holistic practice of new medical providers coming out of academic programs that are educating students in palliative care.

Also, a longitudinal study that would follow medical students throughout their practice would provide support for the findings in this study indicating that experience impacts the physicians' attitudes and behaviors regarding palliative care, but not necessarily knowledge.

Recommendations

This study's results inform the research question and address its intended purpose. As previewed in the Limitations discussions above, this study's results also suggest a number of recommendations for practice: continuing education and training, access to consultation, and use of Project Echo® (ANTHC, 2019). Similarly, this study's results suggest several opportune areas for further research: research to further establish validity and reliability of the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D); research in individual medical specialties; and research on rural care. Each of these recommendations is discussed in the following sections.

Recommendations for Practice

Continuing education and training. Based on the findings of this study, mandated continuing education on palliative care is recommended for Alaskan physicians, along with all other medical providers. Currently, there are no requirements for continuing education units (CEUs) for palliative care. The results of this study indicate that participating physicians believed palliative care was synonymous with end of life. Training on the scope of palliative care in treating patients with serious illnesses will facilitate early referrals to palliative care (Hui et al., 2018). Although it is programmatic to add to the burden of physicians' educational requirements, all medical providers, regardless of specialty, work with patients who may develop serious illnesses.

Such training will result in early referrals to palliative care, which research has demonstrated not only improve quality of life but also extend patients' lifespans (Temel et al., 2017). The training must address the unique palliative care needs of patients with serious illnesses, including cancer. The training must address the distinctions between appropriate prescribing of opioids and addiction. An additional recommendation is training to address effective prognostic communication skills for Alaskan physicians, which empower patients to make medical decisions that align with patients' respective treatment wishes.

Access to consultation. Alaskan physicians can have access to national training centers such as the Center to Advance Palliative Care™ (CAPC, n.d.). CAPC provides virtual office hours during which physicians can consult a palliative care specialist about their patients. Thus, physicians in both urban and rural areas can consult on individual patients to ensure the best possible care regardless of location. In addition, CAPC also provides continuing education credits, which is a way for physicians to meet state requirements for CEUs in palliative care.

Project Echo®. Alaskan physicians can participate in Project Echo® (ANTHC, 2019), which provides access to a multidisciplinary team for case consultation (Carlin et al., 2018). Utilizing the telemedicine model, physicians statewide can present palliative cases to the team (Kaur & Winchester, 2018). These highly recommended resources can enable all physicians, regardless of specialty or location, to provide the best care for their patients and families.

Recommendations for Further Research

Survey instrument. This study combined three separate, reliable, and validated instruments into one survey instrument designed specifically to measure the three domains of physicians' knowledge, attitudes, and behaviors regarding palliative care. The Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D) needs further research to determine its reliability and validity. To test reliability and validity, researchers could utilize this instrument to survey other urban and rural areas that are interdependent upon one another for medical services, as is the case in Alaska. In addition, this survey could be used to study the knowledge, attitudes, and behaviors of practitioners in different specialties, such as oncology and surgery. The next section addresses further research opportunities in specific specialties.

Specialties. Further research is recommended to study physicians' knowledge, attitudes, and behaviors regarding palliative care in medical specialties that work directly patients with serious illnesses and their families. Such research could use the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D) to reveal targeted areas for additional training. Several suggested specialties are noted below.

***Oncologists*.** Research shows that oncologists are notorious for late referrals to palliative care despite mounting evidence of its positive impact on quality and extended duration of life (Hui, Hannon, Zimmermann, Bruera, 2018; Sorenson, 2020). A potential research question would be, "Does a relationship exist between oncologists' knowledge, attitudes, and behaviors regarding palliative care?" Such a study may reveal that, unlike this current study, oncologists may have the knowledge to treat the symptoms but may struggle with attitudes and behaviors in addressing the patient's concerns about mortality.

Surgeons. Surgeons work with a patient population with serious conditions that require surgery. Research indicates that surgeons underutilize palliative services in the hospital due to the focus on curative treatments (Evans, Turner, Gloria, Pickett, & Galanos, 2019). Utilizing in-patient palliative care services can result in goals-of-care conversations that may result in less invasive surgical procedures aligning more with the patient's desire for quality of life versus quantity of life. A research project using the survey in this study may reveal surgeons could benefit from targeted trainings in knowledge, attitudes, and behaviors regarding palliative care.

Primary care providers. Primary care providers are on the front line of early diagnosis of serious, chronic, life-limiting conditions that may benefit from palliative care involvement (Clearly, 2016). Such involvement of palliative care early on can foster patients having advance directives in place (Clearly, 2016). Research could examine primary care providers' knowledge, attitudes, and behaviors regarding palliative to determine the areas that may be a challenge for the providers in implementing the inclusion the principles of palliative care into their practices.

Nurse practitioners. Nurse practitioners treat from birth to grave (Mark & Patel, 2019). Nurse practitioners' practices range from primary care to specialties such as oncology. They are in a unique position to implement palliative care early on for their patients. Future research could entail a comparison study of physicians' and nurse practitioners' knowledge, attitudes, and behaviors regarding palliative. Since the nurse practitioners' expertise is so diverse, researchers could study the knowledge, attitudes, and behaviors within each of the specialties as well.

Rural medical care. There is a dearth of research on medical care in rural areas, especially in Alaska. This study examined the difference between urban and rural physicians' knowledge, attitudes, and behaviors regarding palliative care. More in-depth research regarding the challenges rural medical providers face in caring for palliative care patients in villages is needed to provide governing bodies and hub hospitals the research to support funding for palliative care programs in rural areas. The literature review revealed the wish for rural Alaskans to be able to receive care at home, especially at the end of life. Currently, physicians treat patients through telemedicine with the assistance of community health aides (Golnick et al., 2012). Community health aides are on the front line in providing symptom management for patients with serious illnesses or those who are dying (Chernoff & Cueva, 2017; Landon, Loudon, Selle, & Doucette, 2004). Yet, this unique system is woefully understudied. The Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D) could be used to gauge the knowledge, attitudes, and behaviors of community health aides. Such data may assist providers in crafting a unique interdisciplinary team, including the medical providers in the hubs and the frontline providers in the villages, to provide palliative care expertise that would foster the patient staying at home, hence improving quality of life.

Implications

Positive Social Change

Prior to this study, the driving force for policy making on palliative care had been anecdotal sources. This is despite Alaska having the highest-in-the-US-per-capita rates of patients with cancer, heart disease, and COPD, to name a few, who could benefit from palliative care. This current study provides stakeholders, such as medical professionals and accrediting boards, data on physicians' knowledge, attitudes, and behaviors regarding palliative care. It also provides insight into the physicians' abilities to address difficult subjects such as end of life with their patients and families through their attitudes and behaviors regarding palliative care. Most significantly, the study provides evidence that Alaskan physicians need training and education about palliative care, and specifically pain management.

The Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey

The Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D) provides detailed insights into the knowledge, attitudes, and behaviors of physicians across specialties. This and additional data from further research as suggested above will provide curriculum developers with specific areas to be targeted to make medical courses and CEUs meaningful to the learner. The survey can become an instrument to measure pre- and posttest outcomes for curriculum developers. In addition, when used in longitudinal studies, the survey could enable researchers to track medical students' and physicians' knowledge, attitudes, and behaviors regarding palliative care as they gain more experience in the field. Such data and results will also support the field of palliative care and the holistic approach to treatment. Ultimately, such results should lead to better quality and continuity of life for serious illness patients and their families.

Rural

This study helped fill the gap in the dearth of research about Alaskan physicians practicing in rural Alaska. Rural Alaskans face many challenges, such as scarcity of medical resources, limited access to medication, and economic hardship due to the geographic and medical care disparities that exist in the state (DeCourtney et al., 2003). This study provides stakeholders a glimpse into the knowledge, attitudes, and behaviors of physicians practicing in rural Alaska. The study revealed that participating rural physicians had behaviors aligned with the palliative care philosophy but that they need access to palliative care knowledge. Utilizing the established telemedicine program, physicians can work with the hub hospital medical team and the Community Health Aide to ensure a continuum of care when the patient returns home to the village (Kruse, Bouffard, Dougherty, & Parro, 2016). In addition, the hub hospital medical team and Community Health Aide will be able to utilize both CAPC (n.d.) and Project Echo® (ANTHC, 2019) to gain the necessary knowledge of symptom control to ensure the patient’s quality of life. Such measures enable the patient’s wish to be home in the village to come to fruition, ensuring improved quality of life.

The Conversation

Physicians (*N* = 133) who took the time to complete a 52-question survey that ranged from medications to talking with patients about dying may be more inclined to have the conversations with their patients. By the very act of participating in the survey, the participating physicians may have gained insight into the need for palliative care for their patients. From this moment on, patients who present with a serious illness may benefit from palliative care interventions that would not have been on the physicians' radar prior to participating in the study. This alone creates a ripple of positive social change.

Methodology

One methodological implication of this study is the development of a new survey instrument, the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D), which provides data on physicians' knowledge, attitudes, and behaviors regarding palliative care. This survey was conducted with physicians practicing in Alaska. The survey may be used nationwide, and internationally, as a tool for stakeholders such as medical schools to improve curriculum in palliative care.

Furthermore, the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey (Cavalier, 2020, Appendix D) is now ready for further testing for reliability and validity. This may include studying the knowledge, attitudes, and behaviors of physicians in different specialties such as oncology or surgery. The survey may be beneficial in longitudinal studies following a cohort from medical school throughout practice to measure the changes as the physicians gain more experience working with patients. In essence, the Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey may be used to improve physicians' educational and practice outcomes for patients and their families experiencing biopsychosocial and spiritual suffering from serious illnesses. As noted in Appendix D, please contact the author to request permission and potential collaboration in such research using this instrument.

Conclusion

This study demonstrates that there is a partial relationship between Alaskan physicians' knowledge, attitudes, and behaviors regarding palliative care. The study revealed Alaskan physicians' positive attitudes and behaviors regarding working with patients with serious illnesses, but deficiencies in their knowledge of palliative care. The participating Alaskan physicians clearly demonstrated the heart of palliative care through their attitudes and behaviors. Aligning attitudes and behaviors with knowledge of palliative care will not only enhance physicians' self-efficacy in their practice, but most importantly, improve quality of life, and perhaps life expectancy, of Alaskans experiencing serious illnesses.

Given Alaska's highest-in-the-US-per-capita rates of cancer, heart disease, and chronic pulmonary lung disease, it is imperative that Alaskan physicians receive the education necessary to avail palliative care to all Alaskans with serious illnesses, regardless of where they live (Jemal et al., 2011; Torre et al., 2015). In doing so, Alaskan physicians will be able to redefine hope in addressing the physical, psychological, social, and spiritual needs of patients and their families facing serious illnesses. With adequate training in palliative care, Alaskan physicians will be able to improve the quality of life of patients with serious illnesses and extend the time patients have with their loved ones.

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Appendix A: Permission for PEACE-Q Use, Incorporation, and Changes

From: [email address]
Sent: Monday, February 5, 2018 2:47 PM
To: Mary Cavalier
Subject: Re: Cavalier: PEACE-Q in dissertation

Dear Mary Cavalier

I'm sorry to be late fir my response.

I permit you to use the PEACE tools too.
You can get The PEACE tool in internet website below.

http://www.jspm-peace.jp/support/pdfdownload.php

But they are provided only in Japanese, not translate in English.

I think you should modify PEACE-Q questions as your ideas.

We also provided other tools to measure knowledge of palliative care in 2009.

Ryo Yamamoto

2018/02/04 8:03、Mary Cavalier

Dear Dr. Yamamoto:

My sincere apologies for sending this request again but I need permission to use the PEACE-Q specifically for my dissertation.

You have graciously given me permission to use the study but in my original request I stated the PEACE tool not the PEACE-Q tool.

For your convenience, allow me to restate that
I am a doctoral student at Walden University in the United States. My study is on the knowledge, attitudes and behaviors of Alaskan physicians regarding palliative care. I would like to use the PEACE-Q tool to measure the knowledge of the physicians. May I please have permission to incorporate it in my study?

Respectfully,
Mary Cavalier, PhDc
Health Psychology
Walden University]
From: Mary Cavalier

------------------------------[Permissions Appendix A continued on next page]-----------------------

Sent: Saturday, February 3, 2018 2:48 PM
To: [email address]
Subject: Cavalier: US adaptation of PEACE-Q

Dear Dr. Yamamoto:

In the PEACE-Q, questions 2 and 3 are specific to Japan. Has the PEACE-Q been modified by changing the questions to be applicable to the United States?

If not, do you think modifying questions 2 and 3 will change the validity of the tool?

I would suggest question 2 would read: In the United States, 50% or less of the general population believe that , if they have cancer, they want to feel secure about receiving cancer treatment and living without severe pain.

Question 3: The total consumption of opioids for pain is more in the United States than other countries.

What are your thoughts or concerns about modifying the PEACE-Q with changing questions 2 and 3 to be specific to the US?

Sincerely,
Mary Cavalier, PhDc
Psychology
Walden University

Appendix B: Permission for Use and Incorporation of Thanatophobia Scale

From: Merrill, Joseph M
Sent: Sunday, February 4, 2018 1:37 PM
To: Mary Cavalier
Subject: RE: Cavalier: use of Thanatophobia Scale in dissertation

Sure, use it anyway you can—let me know what you find!

Joe Merrill

From: Mary Cavalier
Sent: Saturday, February 03, 2018 4:53 PM
To: Merrill, Joseph M
Subject: Cavalier: use of Thanatophobia Scale in dissertation

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Dear Dr. Merrill:

I am a doctoral student at Walden University. My study is on the knowledge, attitudes and behaviors of Alaskan physicians regarding palliative care. I would like to use the Thanatophobia Scale to measure the attitudes of physicians. May I incorporate the scale into my study?

Respectfully,
Mary Cavalier, PhDc

Appendix C: Permission for Use and Incorporation of Palliative Care Self-Efficacy Scale

Palliative Care Self-Efficacy Scale

Version Attached: Full Test

PsycTESTS Citation: Phillips, J., Salamonson, Y., & Davidson, P. M. (2011). *Palliative Care Self-Efficacy Scale* [Database record]. Retrieved from PsycTESTS. doi:http://dx.doi.org/10.1037/t10464-000

Instrument Type:
Rating Scale

Test Format:
Participants rate their perceived self-efficacy (capability) to successfully perform each palliative care task using a four point gradation scale: (1) need further basic instruction; (2) confident to perform with close supervision/coaching; (3) confident to perform with minimal consultation; or (4) confident to perform independently.

Source:
Phillips, Jane, Salamonson, Yenna, & Davidson, Patricia M. (2011). An instrument to assess nurses' and care assistants' self-efficacy to provide a palliative approach to older people in residential aged care: A validation study. International Journal of Nursing Studies, Vol 48(9), 1096-1100. doi:10.1016/j.ijnurstu.2011.02.015, © 2011 by Elsevier. Reproduced by Permission of Elsevier.

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Appendix D: Knowledge, Attitudes, and Behaviors Regarding Palliative Care Survey

Author: Mary Bernadette Cavalier

Please contact the author to request permission and potential collaboration in such research using this instrument.

KNOWLEDGE, ATTITUDES, AND BEHAVIORS REGARDING PALLIATIVE CARE SURVEY (Cavalier, 2018)

Demographics

Please complete the following questions:

Gender: ___ Male ___ Female

Age: ___ 25-35 ___ 36-45 ___ 46-55 ___ 56-65 ___ 65-75 ___76 or older

Years of clinical experience:

___1-5 ___6-10 ___11-15 ___16-20 ___20-25 ___26-30 ___30-35 ___ +35

In your career, how many patients with a serious illness have you treated up to the time of their demise?

___1-5 ___6-10 ___11-15 ___16-20 ___20-25 ___26-30 ___30-35 ___ +35

Where do you mostly practice? ___Urban ___Rural

What is the zip code for your practice? ___________

Please circle either T for true or F for False. Please answer all questions.

1. T F Palliative care is synonymous with terminal care.

2. T F In the United States, 50% or less of the general population believe that, if they have cancer, they want to feel secure about receiving cancer treatment and living without severe pain.

3. T F The total consumption of opioids for pain is more in the United States than other countries.

4. T F When cancer pain is severe, one of the third-step drugs of WHO’s Pain Relief Ladder is used as an initial analgesic.

5. T F When opioids are initially prescribed, all non-opioid analgesics should be discontinued.

6. T F Morphine is used safely in a patient with renal failure.

7. T F The rescue dose of opioid is 5% of the daily dose.

8. T F Because the tolerance does not occur for opioid-induced nausea, an antiemetic should be prescribed for all patients.

9. T F Total dose of daily opioids increases by 10% if pain is unpalliated.

10. T F Opioid rotation or switching should be considered when it is difficult to increase the dose of opioids due to adverse effects.

11. T F About 10% of the patients with controlled baseline pain have breakthrough pain.

12. T F Invasive dental procedures should be avoided during bisphosphonate treatment.

13. T F Opioid-induced nausea and/or vomiting occur in 80% or more of patients taking opioids.

14. T F It is necessary to use a laxative together with oral opioids, because most patients who take opioids experience constipation.

15. T F Opioids cause addiction in 0.2% or less of cancer patients under close careful monitoring.

16. T F If a patient has dyspnea, the PaO_2 of the patient is under 60 Torr.

17. T F Morphine is effective for dyspnea.

18. T F If room temperature is maintained higher (hot), a patient with dyspnea often experiences relief.

19. T F The neurotransmitters in the vomiting center are dopamine, histamine, acetylcholine, and serotonin.

20. T F When the primary cause of nausea is hypercalcemia, the administration of bisphosphonate is a useful treatment for alleviating nausea.

21. T F Prochlorperazine sometimes cause akathisia.

22. T F When a patient has a high level of psychological distress, clinicians are recommended to examine whether the patient has suicidal ideation.

23. T F When the patient has suicidal ideation, psychiatric consultation is recommended.

24. T F An anxiolytic is one of the useful medications for patients with psychological distress.

25. T F Delirium occurs due to drugs or physical etiologies.

26. T F Benzodiazepines should be the first for delirium.

27. T F It is better to make the room pitch black for a patient with delirium, so that he or she can sleep well.

28. T F An open-ended question means that it cannot be answered with a simple ‘yes’ or ‘no,’ and requires an unrestricted answer based on the subject’s own feelings.

29. T F When physicians convey bad news, they should ask the patient’s

concern and understanding about the disease.

30. T F It is better to repeatedly use the word ‘cancer’ when telling the patient about his or her malignancy.

31. T F There is a consultation support center in all designated cancer centers.

32. T F All terminally ill cancer patients 40 years of age can access long-term care insurance.

33. T F All designated clinics with home hospice function have a 24-hour 7-day system.

Please circle the number that corresponds to how strongly you agree or disagree with the following statements. Answer according to how you think you would feel regarding the issues and situations presented below

34. Dying patients make me feel uneasy

1 2 3 4 5 6 7

Strongly disagree Strongly agree

35. I feel pretty helpless when I have terminal patients on my ward

1 2 3 4 5 6 7

Strongly disagree Strongly agree

36. It is frustrating to have to continue talking with relatives of patients who are not going to get better

1 2 3 4 5 6 7

Strongly disagree Strongly agree

37. Managing dying patients traumatizes me

1 2 3 4 5 6 7

Strongly disagree Strongly agree

38. It makes me uncomfortable when a dying patient wants to say goodbye to me

1 2 3 4 5 6 7

Strongly disagree Strongly agree

39. I don't look forward to being the personal physician of a dying patient

1 2 3 4 5 6 7

Strongly disagree Strongly agree

40. When patients begin to discuss death, I feel uncomfortable

1 2 3 4 5 6 7

Strongly disagree Strongly agree

Please rate yourself using the following scale. Please respond to all 12 questions.

1. Need further basic instruction;
2. Confident to perform with close supervision/coaching;
3. Confident to perform with minimal consultation;
4. Confident to perform

41. ____ Answering patient's questions about the dying process

42. ____ Supporting the patient or family member when they become upset

43. ____ Informing people of the support services available

44. ____ Discussing different environment options (e.g. hospital, home, family)

45. ____ Discussing patient's wishes for after their death

46. ____ Answering queries about the effects of certain medications

47. ____ Reacting to reports of pain from the patient

48. ____ Reacting to and coping with terminal delirium

49. ____ Reacting to and coping with terminal dyspnea (breathlessness)

50. ____ Reacting to and coping with nausea/vomiting

51. ____ Reacting to and coping with reports of constipation

52. ____ Reacting to and coping with limited patient decision-making capacity