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The Effects of Spirituality and Religiosity on Well-Being of People With Cancer: A Literature Review on Current Evidences

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Context: Receiving a diagnosis of cancer can be devastating and life-altering news for any person. Recent studies have shown that spirituality and religiosity may have positive effects on physical and psychological well-being in patients with cancer. This review article aimed to assess the effects of spirituality and religiosity on well-being of patients with cancer.

Evidence Acquisition: A literature search was done for related articles published between 2000 and 2014 on PubMed, Science Direct, Embase, Web of Science, and Scopus for both English and non-English language articles by the following keywords: "cancer", "spirituality", "religion/religious/religiosity", and "Well-being".

Results: Of the 16 studies reviewed, ten studies have found that spirituality and religiosity were positively associated with well-being, two studies found no association, and four studies showed both beneficial and detrimental effects of spirituality and religiosity on well-being of patients with cancer.

Conclusions: Most of the reviewed articles showed the important role of religiosity and spirituality in palliative treatment of patients with cancer. It has recommended that medical care team, especially nurses, pay more attention to spiritual and religious beliefs of patients with cancer to improve their well-being.

Keywords: Cancer; Spirituality; Religiosity; Well-Being; Literature Review

1. Context

Cancer is one of the rapidly growing diseases that involves about 12 million people worldwide (1). It is reported that seven million patients die of cancer annually, and 25 million people are currently living with a diagnosis of cancer (2). In developed countries, cancer has become the leading cause of death, and in developing countries, it is second only to heart diseases (3). Based on World Health Organization (WHO) report, the increasing cancer burden affirms the urgent need for prevention and care (2, 4). Today, palliative care is considered as the key goal for patients living with cancer (5, 6). The WHO defines palliative care as an approach that improves the quality of life (QoL) of patients and their families facing life-threatening diseases by means of prevention or early identification and treatment of patients, which could be physical, psychosocial, or spiritual (7). This holistic approach recognized that the needs of dying patients were complex and multifaceted and, therefore, required going beyond a conventional biomedical understanding of the disease and its treatment (8). Based on literature, spirituality and religiosity are two essential subjects in palliative care that have attracted an increasing interest among patients with cancer in the context of health and healthcare practice (6, 9). The National Quality Forum (NQF) identifies spiritual and religious aspects of care as one of eight domains of quality palliative and hospice care in patients with cancer (10). Moreover, WHO definition of palliative care has cited that spiritual and religious aspects of care are essential to good palliative care among patients with cancer (7). According to the National Cancer Institute, spirituality is defined as "an individual's sense of peace, purpose, and connection to others, and beliefs about the meaning of life" that may be expressed through religion or other means, while religiosity, one type of expression of spirituality, is defined as "a set of beliefs and practices associated with a particular religious tradition or denomination" (11). Today, the role of spirituality and religiosity in the adjustment to cancer has been studied in both qualitative (12-18) and quantitative (19-34) studies. It is recognized that the spirituality and religiosity as a holistic human characteristic can have a positive influence on improvement of patients' QoL (9, 25, 26, 31, 34-36), functional well-being (37), and physical well-being (38) and reduce of distress symptoms (33, 38, 39) in patients with cancer. It is reported that between

50% and 95% of patients with cancer view religion and spirituality as personally important issues (40, 41). Patients with cancer report their spirituality helps them find hope, gratitude, and positivity in their cancer experience, and that their spirituality is a source of strength that helps them cope, find meaning in their lives, and make sense of the cancer experience as they recover from treatment (42). These two variables also serve multiple functions in long-term adjustment to cancer such as maintaining self-esteem, providing a sense of meaning and purpose, and giving emotional comfort (43). Despite the important role of religious and spiritual beliefs in the lives of patients with cancer, these two variables can also adversely affect patients with cancer' health (44). Some investigations have found that spiritual and religious experiences and practices cause depression, poorer QoL, and callousness towards others if they saw the crisis as a punishment from God, if they feel excessive guilt, or if they had an absolute belief in prayer and cure and an inability to resolve their anger if cure did not occur (42, 45).

Due to the contradictory results of previous research regarding to the effect of spirituality and religiosity on well-being of people with cancer, and considering that most studies conducted in this regard are qualitative, we decided to review quantitative studies that assessed the effects of spirituality and religiosity on well-being of people with cancer.

2. Evidence Acquisition

In this review article, we performed an electronic search on articles published from August 1, 2000 through April 28, 2014, on PubMed, Science Direct, Embase, Web of Science, and Scopus for both English and non-English language articles, using the following keywords as medical subject heading (MeSH): "cancer", "spirituality", "religion/religious/religiosity", and "Well-being". The references of retrieved items were also searched to identify additional items about this topic. In addition, reference lists of journal papers were searched by hand for relevant papers. We included articles that examined the role of spirituality and religiosity in patients aged ≥ 18 years with a diagnosis of cancer within the last five years. We excluded studies that examined spirituality and religiosity in children with cancer, in relatives of patients with cancer, or in professionals and caregivers. Moreover, we excluded quantitative and review studies.

In total, we found 1032 items (including duplication). After careful reading of title, abstract, and full text (when available), 110 articles were initially selected, but after further reading, 40 studies that met the eligibility criteria were included. We excluded 24 of these 40 articles due to lack of patient history (14 articles), being quantitative and review studies (8 articles), being done in children (2 articles). Therefore, 16 studies were finally included in this review.

3. Results

Among 16 evaluated studies, 12 studies were cross-sectional (19-22, 24-26, 29, 31-34), three were longitudinal (23,27,28), and one was randomized clinical trial (RCT) (47) in design. Based on results, eight were conducted in the United States (20, 21, 24, 25, 27-29, 31), two in Canada (19, 32), two in Iran (34, 46), two in Taiwan (32, 33), one in Australia (22), and one in both Korea and the United States (26). Most patients were English speaking with a Christian or Jewish religion. Sample sizes of studies ranged from 32 to 198. Ages of the participants ranged from 19 to 84 years. Seven studies examined mixed cancer groups (20, 25, 26, 31). Of the 12 studies that examined specific types or sites of cancers, the majority examined breast cancer (19, 21, 23, 24, 27-29, 34). Of the 16 reviewed studies, ten studies (19, 22, 23, 26, 28, 29, 31, 33, 34, 46) have found that spirituality and religiosity were positively associated with well-being, two (21, 27) found no association, and four (20, 24, 25, 32) showed both beneficial and detrimental effects of spirituality and religiosity on well-being of patients with cancer (Table 1).

Table 1. Studies Exploring the Effects of Spirituality and Religiosity on Well-Being of People With Cancer [a]

Reference, Country	Study Aims	Study Design	Sample Size and Cancer Site	Findings
Gall et al. 2000, Canada (19)	To explore religious resources in long-term adjustment to BC	Cross-sectional	32 patients with BC diagnosed in past 5 years recruited from newspaper and BC-specific newsletter	Relationship with God or God image as a religious resource, and religious coping behavior were related to the survivors' well-being. An image of God as benevolent was strongly correlated with a lack of psychological distress ($r = 0.51$, $P < 0.008$). A strong correlation was found between religious discontent as a coping mechanism and diminished life satisfaction ($r = 0.66$, $P < 0.008$).
Nairn and Merluzzi, 2003, USA (20)	To determine whether three types of religious coping strategies are related to QoL and adjustment to cancer	Cross-sectional	192 patients with different kinds of cancer (n = 154 for illness adjustment and n = 138 for QoL)	Religious coping (deferring collaborative) showed a positive association with illness adjustment ($P < 0.05$) but no association with QoL.
Manning-Walsh, 2005, USA (21)	To examine association between symptoms distress and QoL when religious support and personal support were introduced as mediating variables	Cross-sectional	100 women with BC aged from 46 to 52 years	Personal support was positively correlated with QoL and partially mediated the effects of symptom distress. Religious support did not mediate symptom distress and was not directly related to QoL.

Boscaglia et al. 2005, Australia (22)	To determine whether spiritual involvement and beliefs and positive and negative spiritual coping could account for any of the variation in anxiety and depression	Cross-sectional	100 women within one-year diagnosis of GC	Younger women, who used more negative spiritual coping, had a greater tendency towards depression and that the use of negative spiritual coping was associated with greater anxiety scores. Although not statistically significant, patients with lower levels of generalized spirituality also tended to be more depressed
Wildes et al. 2009, USA (25)	To assess association between religion (practices and beliefs) and spirituality (social support from spiritual community) and health-related QoL	Cross-sectional	117 cancer survivors from clinics, organizations, and support group	Modest significant correlations were found between religion and spirituality with health-related QoL subscales include social well-being ($r = 0.27$, $P < 0.005$) and functional well-being ($r = 0.216$, $P = 0.022$). However, significant association were not found between religion/spirituality and emotional well-being and physical well-being
Purnell et al. 2009, USA (24)	To investigate the association between religious practice and spirituality and QoL and stress in survivors of BC	Cross-sectional	130 women with stage II or III BC that assessed after two years of diagnosis	A hierarchical regression analysis showed a strong positive association between spiritual well-being and QoL ($B = 0.65$, $P < 0.001$) and an inverse association between spiritual well-being and stress ($B = -0.39$, $P < 0.001$). Whereas religious practice was not significantly associated with these variables.
Lim and Yi, 2009, USA and Korea (26)	To investigate the effect of religiosity, spirituality, and social support on QOL of Korean-American and Korean BC and GC survivors	Cross-sectional	161 women diagnosed with BC and GC (110 Koreans and 51 Korean-Americans)	Religiosity and spirituality were associated with some QOL outcomes in different patterns in Korean-American and Korean BC and GC survivors
Hebert et al. 2009, USA (27)	To explore the association between religious coping and well-being in patients with cancer	Longitudinal	198 women with stage I or II and 86 women with stage IV BC	Negative religious coping (ie, feeling abandoned by or anger at God) predicted worse overall mental health and life satisfaction (2% of the variance). Positive religious coping (ie, partnering with God or looking to God for strength, support, or guidance) was not associated with any measures of well-being
Gall et al. 2009, Canada (23)	To investigates the association between religious coping and emotional distress and emotional well-being at each point in time across the process of adjustment for BC	Longitudinal	93 patients with BC and 160 women with a benign diagnosis	Women who worked with God or choose to surrender to God reported higher emotional well-being and lower emotional distress at various points from pre-diagnosis period through 2-year postsurgery ($r2 = 0.28$; $P < 0.02$ or greater). Women who pleaded for direct intercession from God reported higher emotional well-being pre-surgically ($r2 = 0.25$, $P < 0.006$) and higher emotional distress one week postsurgery ($r2 = 0.21$, $P < 0.015$)
Friedman et al. 2010, USA (29)	To examine association between self-blame, self-forgiveness, spirituality, mood, and QOL for having developed BC	Cross-sectional	108 with early BC	Greater levels of spirituality and self-forgiveness were associated with decreased mood disturbance and better QOL ($P < 0.01$)
Bussell and Naus, 2010, USA (28)	To investigate coping responses during chemotherapy and how these coping responses during chemotherapy and at two year follow-up related to posttraumatic growth	Longitudinal	59 patients with BC during chemotherapy (Time 1), and 24 patients two years later (Time 2)	Using religion at time of chemotherapy ($r = 0.42$, $P < 0.04$), and 2 years following chemotherapy ($r = 0.56$, $P < 0.04$) were associated with post-traumatic growth (as a proxy for psychologic well-being) 2 years following chemotherapy
Vallurupalli et al. 2012, USA (31)	To examine the association of patient spirituality, religiousness, and religious coping with QoL; and assess patients' perceptions of spiritual care in the cancer care setting	Cross-sectional	69 patients with advanced cancer receiving palliative radiation therapy	Patient spirituality and religious coping were associated with improved QOL in multivariable analyses ($\beta = 10.57$, $P < 0.001$ and $\beta = 1.28$, $P = 0.01$, respectively). Most patients considered attention to spiritual concerns an important part of cancer care by physicians (87%) and nurses (85%)
Au et al. 2012, Taiwan (32)	To examine the association between spirituality and indicators of sexuality (eg, self-concept, satisfaction, function) and health-seeking behaviors	Cross-sectional	120 adults with rectal cancer	Spirituality was positively and significantly correlated with better communication ($r = 0.47$, $P < 0.001$), resourcefulness ($r = 0.32$, $P = 0.000$), sexual relationship ($r = 0.48$, $P < 0.001$), male sexual self-concept ($r = 0.44$, $P = 0.000$), and female sexual self-concept ($r = 0.47$, $P = 0.007$). However, spirituality was not associated with sexual function in men or women
Li et al. 2012, Taiwan (33)	To examine association between demographic and clinical characteristics, spiritual well-being, and psychosocial adjustment	Cross-sectional	45 Taiwanese patients aged 42 to 83 years who were diagnosed with colorectal cancer and underwent colostomy surgery	Spiritual well-being was significantly associated with psychosocial adjustment ($r = -0.52$, $P < 0.01$), and 4 predictors (income change after surgery, self-rated disease severity, time since surgery, and spiritual well-being) accounted for 53% of the variance in psychosocial adjustment
Moeini et al. 2014, Iran (46)	To determine the effects of a spiritual care program including supportive presence and support for religious rituals on anxiety of patients with leukemia	Randomized Clinical Trial	64 adult patients with leukemia ($n = 32$ in each group)	There was no significant difference between the two groups before the intervention. However, after the intervention, mean score of anxiety were significantly lower in the experiment group than in the control group ($P < 0.01$). There was also a significant difference in the scores of the experiment group before and after the intervention ($P < 0.01$)
Jafari et al. 2013, Iran (34)	To investigate the association of QOL with spirituality	Cross-sectional	68 patients with BC	There was a significant positive correlation between general QoL and total spiritual well-being scores ($r = 0.59$, $P < 0.001$)

[a] Abbreviations: BC, breast cancer; GC, gynecologic cancer; and QoL, quality of life.

4. Conclusions

In this review, we have summarized studies that assessed the effects of spirituality and religiosity on wellbeing of patients with cancer. Although reviewed studies vary in terms of methodology, kinds of cancer, and objectives, results consistently show the importance of religiosity and spirituality in coping with a cancer diagnosis and subsequent treatment. Based on evidences, most review studies that investigated the effects of religiosity and spirituality in patients with cancer showed mixed results. Thune-Boyle et al. (47) reviewed 17 studies examining religious and spiritual cognitions and/or behaviors as coping strategies in adults dealing with cancer. They found only seven of 17 studies with some evidence for the beneficial effect of religious coping, but one of these also found religious coping to be detrimental in a sub-sample of their population. Three studies found religious coping to be harmful, and seven did not find significant results. In another review study that was conducted by Visser et al. the majority of the cross-sectional studies (31 of 36) found a positive association between spirituality and well-being and four studies with a longitudinal design showed mixed results (48). Moreover, a recent systematic review confirmed that spirituality and religiosity were associated with reduced mortality only in studies on healthy populations, but not in studies on diseased population (49). However, there are some review studies that indicated the association of religiosity and spirituality with better well-being in patients with cancer. In a review, Schreiber et al. (50) suggested that religion and/or spirituality can play a role in maintaining and/or increasing well-being among breast cancer survivors. Moreover, in an integrative review of the current literature, Tate provides support that spirituality is a meaningful part of the breast cancer experience for African-American women, and has important role for patients to overcome the physical, psychological, and emotional burdens that accompany a breast cancer diagnosis (51).

The discrepancy in the findings may result from using insensitive measures of religiosity and spirituality, relying on cross-sectional designs, or failing to incorporate cultural diversity in measures and designs. Today, various mechanisms are identified to be implicated in the relation between religiosity and spirituality and outcomes of cancer treatment. Results of recent studies have shown that cancer survivors have adjusted to their life-threatening illnesses by holding onto hope, compensating for losses, and actively maintaining their personal lives through a process of experiential learning. This learning process allowed individuals to create or discover opportunities that might lead to maintaining or gaining some enjoyment of life even as suffering continue during the course of their cancer and recovery (52, 53).

In addition, studies suggested that spirituality and religiosity with such mechanisms include behavioral, physical, social support, and psychologic buffering of the severity of cancer symptoms. Behavioral mechanisms include religious encouragement (i.e. the religion encourages the adoption of a set of behavioral practices) to engage in various health behaviors such as offering diet guidelines (e.g. diets low in fat or to avoid nicotine). Physiologic mechanisms include participating in religious practices (e.g. prayer and meditation) offering means of relaxation and thereby contributing to better health outcomes. Socialization is a key element of religious attendance and it increases with increased religious involvement. The benefits of social support are extensively documented in the health psychology literature; however, it also appears that religious and spiritual beliefs provide benefits in their own right because they facilitate increased intimacy and connection with others. Regarding psychological mechanisms, spirituality and religiosity are found to enhance psychologic well-being through lowering levels of depression, anxiety, and hopelessness, and consequently, indirectly affect physical health. Another mechanism is cognitive improvement that has not been extensively investigated as mediator in the association between religious coping and cancer treatment outcome (38, 54). Therefore, more research is needed in this area to better understand the specific factors, mechanisms, and pathways of action that mediate religiosity and spirituality in cancer treatment. Despite the beneficial effects of religiosity and spirituality on cancer, these patients are prone to spiritual distress upon facing with their diagnosis, change in disease stage, and the difficulties of ending their lives that may lead to poorer outcomes and is, therefore, considered maladaptive.

Today, the importance of spiritual and religious beliefs in patients with cancer was discussed from numerous perspectives in the nursing literature (55, 56). Florence Nightingale noted that spirituality is intrinsic to human nature and is our deepest and most potent resource for healing in patients with cancer (57). In a recent study conducted by Winkelman et al. on terminally ill patients with cancer, most patients (87%) agreed it was important for nurses to consider patients' spiritual concerns within the medical setting (36). However, it is reported in many studies that religious and spiritual needs of advanced patients with cancer are not supported by nurses (9, 58, 59). Based on studies, 81% of patients with cancer reported that most nurses ignored their spiritual or religious beliefs (59), and 72% reported their spiritual needs were supported minimally or not at all by nurses (9). The main reason for this negligence may be the lack of healthcare professional training, design of clinical practices, shortages of healthcare providers, payment, and policy constraints. Therefore, to provide holistic nursing care, nurses must understand that spirituality and religiosity are important in most patients with cancer. It is recommended that nurses assess the role of spirituality and religiosity in patients with cancer and develop personalized plans

of care as they accompany these patients throughout the cancer journey. Totally, spiritual and religious beliefs are not a static and often changes as the cancer experience unfolds. Therefore, close surveillance of patients is necessary to ensure that cues indicating spiritual and religious needs are not missed. Nurses also should nurture and support their own spirituality and religiosity to be available as a spiritual and religious resource for their clients.

Our study had some limitations that should be considered. First, many reviewed studies were cross-sectional in design that make it impossible to establish causality among spirituality, religiosity, and various physical and psychosocial symptoms. Second, the sample sizes of most reviewed articles were relatively small. Third, most studies used mixed cancer groups at different stages of their illness, which could affect their sense of well-being. Fourth, the majority of the studies in this review were conducted in the United States (8 of 16). According to the United States Central Intelligence Agency, 81% of Americans adhere to one of the three major religions (Christianity, Judaism, and Islam), which may differ considerably from other countries. Therefore, in order to fully understand the role of religiosity and spirituality in cancer treatment, future studies should examine these two factors as their main aim, using specific cancer groups that are similar in terms of length of illness. In addition, use of more longitudinal and randomized clinical trials and specific questionnaires are suggested. Furthermore, future studies should consider a systematic control for possible influential variables such as perceived social support.

The most reviewed articles show the importance role of religiosity and spirituality in palliative treatment of patients with cancer, thus, confirming the place of spirituality and religiosity in the holistic construct of palliative care among patients with cancer.

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Zeinab Ahmadi, Fatemeh Darabzadeh, and Morteza Nasiri contributed equally to this work and performed the literature search and wrote first draft; Morteza Nasiri and Miad Askari provided expert opinion and reviewed the paper.

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