THE EUROPEAN SOCIETY OF MEDICINE
Medical Research Archives, Volume 13 Issue 3

RESEARCH ARTICLE

The Role of Spirituality/Religiosity in the Cancer Journey

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OPEN ACCESS

PUBLISHED
31 March 2025

CITATION
Paul, A., and Kalir, T., 2025. The Role of Spirituality/Religiosity in the Cancer Journey. Medical Research Archives, [online] 13(3). https://doi.org/10.18103/mra.v13i3.6318

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DOI
https://doi.org/10.18103/mra.v13i3.6318

ISSN
2375-1924

ABSTRACT

Spirituality and religiosity (S/R) play a significant role in the cancer journey, influencing patients' quality of life, mental resilience, and even physiological health. This review explores the intersection of S/R with cancer treatment and recovery, utilizing insights from a diverse body of scientific literature. Studies indicate that S/R can act as a source of comfort, community support, and psychological well-being among cancer patients. Some results demonstrate that S/R is associated with improved immune function, decreased fatigue, and better emotional coping. Furthermore, the integration of spiritual care in oncology treatment may add to holistic patient care by confronting existential worries, promoting hope, and strengthening overall quality of life. However, the difficulty of defining and measuring S/R poses challenges, further influenced by cultural differences that shape how it is experienced. This review illustrates the potential benefits of S/R in cancer care and champions greater incorporation of spiritual discussions in medical settings to support interested patients. Further research should seek to refine methodologies for investigating S/R and explore best practices for integrating spiritual care into standard oncology treatment.

Background

For many cancer patients, spirituality may impact their cancer journey. For some, spirituality and religiosity may provide comfort, meaning, and community support amidst the physical and emotional turmoil of their cancer diagnosis and treatment. For others, it may open a space for potential conflicts, leading to difficult questions such as one's purpose, faith, and suffering. In contrast, the secularist patient may encounter a different experience.

Though challenging and difficult to define, spirituality is broadly regarded as a relationship with and belief in something greater than oneself, often providing a purpose in life and a sense of connection and obligation. The interplay between cancer and spirituality is likely to be deeply personal and may differ across cultural, religious, and treatment contexts. The term spirituality is frequently associated with and to some, synonymous with religiosity. Religiosity however, is broadly defined as the quality or state of being religious and a devotion to religion. This often includes prayer, faith, and organized religious spaces. Some draw strength from traditional religious practices, while others find peace in non-religious spiritual practices such as mindfulness or community involvement. Some studies relevant to the topic of the intersection between spirituality/religiosity and cancer recovery, do not distinguish between the two concepts. Oftentimes, many studies use the term spirituality solitarily, with "religiosity" being included within its definition. Regardless of whether the terms have been explicitly defined or presented as one, we hypothesize that there is a beneficial relatedness between spirituality/religiosity and the cancer journey to recovery.

Perhaps because the terms spirituality and religiosity are difficult to define, they would be difficult to measure; and hence would be difficult to study via clinical trials regarding their benefit. This may explain why a survey of the medical-scientific literature yields fewer such studies than those investigating more definably, or precisely measurable parameters. The nature of this difficulty has been discussed eloquently by JS Levin[1,2], who stated that at the time of his writing, in relation to studies of the potential protective effects of religion on health there was an as yet unmet need to harmonize the concepts of natural history of disease, salutogenesis and host resistance between general epidemiologists and social epidemiologists, with a need for more rigorously scientific study design. He raised the provocative question of whether psychosocial factors that promote salutogenesis and strengthen host resistance might provide something akin to herd immunity in a religious group. He also mentioned that constructs such as hope, forgiveness, faith, altruism, love and empathy might strengthen host resistance in the religious community, and these deserved further study.

Attempting to accurately quantify the breadth and depth of a person's faith would be a most challenging task which as of yet, has not been achieved. But numbers are needed for statistical analysis and as such, researchers have largely utilized questionnaires and self-reports by subjects, to assess. Woods and Ironson[3] studied sixty medically ill patients in Florida, in order to examine their spiritual and religious beliefs and experiences and the perceived impact on their health. Roughly 40% of the patients identified as spiritual, another roughly 40% as religious, and the remaining 20% identified as both. They found that higher education was associated with a greater likelihood to identify as spiritual, as compared with those who identified as religious or both religious and spiritual. Type of illness was also significantly associated: HIV patients were most likely to identify as spiritual, cancer patients were evenly divided between spiritual, religious and both, and myocardial infarction patients mostly identified as religious. Spiritual subjects were more likely to report meditation activity. And while there was no significant difference among the groups in terms of reading of religious/spiritual materials, spiritual subjects reported reading this type of material twice as often and with a wider range of materials than religious subjects. In addition, while there were no significant differences in subjects reporting of charitable giving, spiritual patients reported giving to more than twice as many charities as did religious subjects. Higher education and higher income levels also were associated with greater giving; including time volunteered for community service. While spiritual subjects responded significantly more often that they could not judge how the behavior of a non-spiritual person might compare with their own, religious subjects were significantly more likely to respond that they were more kind and loving, had greater peace of mind, had more conscience, less self-centeredness, and were less materialistic than non-religious people. There were no significant differences between the spiritual self-identifiers and the religious self-identifiers as to the notion that spirituality was a communication or connection with God, and also no significant differences between the groups in responding to questions relating to religion as a set of rules and laws; or that religion is man-made. In contrast, spiritual self-identifiers were significantly more likely to respond that spirituality was an awareness of a universal connection of all things, a plan and orientation for one's life, and a submission of one's ego to a higher ideal. Whereas religious self-identifiers were significantly more likely to respond that spirituality is a New Age phenomenon. In terms of how their beliefs impacted their health, the authors found that spiritual people felt influenced within themselves through self-empowerment: finding courage and optimism to help them cope, whereas religious people felt they were helped through something outside of themselves: prayers would be answered, seeking community prayers, guidance from doctors, or through rules regarding specific health behaviors (alcohol and tobacco use). The authors were not able to determine whether one modality was superior to the other in terms of being beneficial to good health, and concluded that more research was needed to better understand the role of religion/spirituality in people's lives.

Shattuck and Muehlenbein[4] performed a meta-analysis on research into spirituality/religiosity (S/R) and physiological markers of health. Their analysis identified 618 results from 87 research studies. They categorized the S/R parameters broadly to include attendance/activity, importance to oneself, coping ability, global religiosity, global spirituality, and intrinsic (subjective) religiosity and extrinsic (social aspects of) religiosity. Health outcomes were categorized to include

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body composition/weight, blood pressure, T cell counts, and pro-inflammatory cytokines. The studies were also characterized as to the health status of the subjects (healthy versus having an illness such as chronic heart disease, HIV, cancer). They found that S/R was associated with improved objective measures of health such as decreased cholesterol and inflammatory markers. They found significant associations between all S/R measures and all physiological health markers. Inclusive in their findings were cardiovascular health, for which they found that blood pressure, cholesterol, markers of vascular health, myocardial infarction and hypertension/stress were all significantly associated with S/R. For inflammation and immunity, T cells were positively associated with S/R. For metabolic parameters, diabetes risk markers and BMI were positively associated with S/R measures. In regards to health status, S/R was significantly associated with health outcomes for healthy individuals and for participants in cancer treatment though the latter sample size was small. The authors distinguished between intrinsic (subjective) religiosity and extrinsic religiosity (social aspects of religious affiliation), and found a suggestion that intrinsic religiosity may be more strongly linked with health outcomes.

Ai et al[5] conducted face-to-face interviews with 177 patients 2 weeks prior to coronary bypass surgery. Eighty-five percent of the members in the study group (85%) identified as being religious, including: Protestant 55%, Catholic 22%, Jewish 5%, Eastern Orthodox 1%, Islamic 1%, Other Christian 1%, Other religion 1%; who found reverence in participating in such practices as: private prayer, in partaking of religious services or activities, in meditation or in Bible reading or watching religious programs. The remaining study subjects identified as non-religious, found reverence in secular contexts such as: being loved or supported by others, in seeking peace/justice, in sight-seeing or being in nature, in listening to music or appreciating art. Medical data were obtained from the Thoracic Surgeons' database at the medical center. Spirituality/Religiosity was assessed by a questionnaire asking subjects to rank their responses to various questions. For example, religious attendance was measured by the question: 'How often do you attend religious services?" Answer choices ranged from 1 to 6 with '1 = Never,' to '6 = nearly every day.' Spiritual experience was assessed with nine experiences, including a sense of God's presence, feelings of inner peace, joy and ecstasy in response to the question: 'Have you ever had any of the following experiences that have affected your belief in God?' with answer choices ranging from 1 to 4 with '1 = no such experience and 4 = yes, confirmed God's existence." The authors found that prayer frequency was associated with diminished complications, and sense of reverence in secular contexts (reverence expressed in naturalistic, aesthetic and socio-moralistic settings) was associated with fewer complications and shorter hospital stays. The authors postulated that possibly a sense of deep interconnectedness may contribute to the positive effect of both prayer and the experience of secular reverence, which in turn may enable a degree of self-transcendence leading to uplifting oneself in the face of a difficulty such as postoperative recovery after a life-changing operation.

Taylor[6] provided a rather extensive review of the literature to conclude that thousands of empirical studies have documented that spirituality/religiosity (S/R), including attendance at religious services, belonging to a faith community, and practicing prayer or meditation are not only linked with desirable health outcomes but further, when supported by healthcare professionals, S/R is linked with various positive outcomes.

Specifically relating to cancer, Thune-Boyle et al[7] performed a review of the literature on spirituality/religiosity in cancer coping. They reviewed seventeen publications available at that time. They found that seven of the papers reviewed found evidence of a beneficial effect of religious coping, whereas one paper found a detrimental effect in a sub-sample of their study groups; another three studies found a harmful effect from religious coping, and seven papers found non-significant results. Thune-Boyle et al[7] felt that the studies they reviewed suffered from some serious methodological problems and thus firm conclusions regarding a beneficial or harmful effect of religious coping with cancer could not be drawn, as more studies were needed.

Taken together, these studies suggest a link between spirituality and religiosity (S/R) and at least for some, improved health and treatment outcomes, highlighting both the potential benefits and complexities of S/R. Spiritual (again oftentimes meaning both traditional religiosity as well as more general spiritual) well-being may be associated with enhanced emotional resilience, greater coping capacity, and a more positive outlook on life. For some cancer patients, faith in a higher power or engagement in spiritual practices may provide a sense of stability and hope, even amidst the uncertainty of having a life-threatening condition. Others report that their spiritual community becomes a critical source of emotional and social support, alleviating feelings of isolation and despair.

Understanding the relationship between spirituality/religiosity (S/R) and quality of life during cancer treatment and recovery also requires consideration of cultural and contextual factors. As such, an opportunity for integration of spiritual care into oncology care for interested patients presents an important consideration in holistic patient care. This review presents a brief summary of some of the scientific literature pertaining to the dynamic impact of spirituality and religiosity (S/R) on the cancer treatment/recovery experience and offers insights into how S/R may be incorporated into the standardized care framework, both for interested patients and for healthcare providers who are comfortable with broaching this topic.

Collection of cases

Identification of research papers was carried out using the PubMed database, employing the terms "spirituality" and "religiosity" and "cancer." Included studies were those which researched adult cancer patients (18 years and older) who were either in treatment or had completed treatment within the past couple of years. Excluded were research studies on pediatric cancer patients and research studies on patients who were terminally ill. This paper is not intended to be an

exhaustive review but rather a sampling of research publications in order to test our hypothesis that S/R provides benefit for cancer patients.

Role of Spirituality/Religiosity in Cancer Patients' Immune Function

Sephton, et al.[8], conducted a study on the relationship between spirituality and immune function in one hundred twelve women diagnosed with metastatic breast cancer.

Spirituality was evaluated through individual patient reports of the personal importance of religious or spiritual expression, as well as the frequency of presence at religious services. Following this, the immune parameters of each subject were measured, focusing on immune factors believed to serve as mediators of stress. Each of the women in the study had stage IV metastatic breast cancer, a 70% or higher Karnofsky rating (a medical measure of a patient's ability to perform daily activities), and resided in San Francisco. Of the 112 participants, 38% were Protestant, 13% were Jewish, 15% were Roman Catholic, 18% identified with other religions, and 16% had no religious affiliations. Both immunological (blood samples for lymphocyte counts), as well as self-reported data (size of social network, sleeping and diet behaviors, marital status, ethnic background, etc.), were collected over the span of 3 weeks. Due to the impacts of chemotherapy and radiotherapy on immunity, these tests were performed on the first day that blood was collected from women undergoing these treatments.

To determine spirituality/religiosity (S/R) in each of the participants, two surveys were used. One survey primarily focused on presence at religious services, while the other determined the importance of spiritual and religious expression. For the survey determining attendance, the question asked: "How frequently do you attend religions services or meetings?" with a response scale ranging from 1 ("not at all") to 4 ("several times a week"). For the survey determining the importance of spiritual expression, the question asked: "How important is religious or spiritual expression in your life?" with a response scale ranging from 1 ("not important") to 4 ("very important ").

Flow cytometry was used to assess white blood cell counts, including absolute lymphocyte numbers, T-lymphocyte subsets, and natural killer cells. Natural killer cell activity and delayed-type hypersensitivity responses to skin test antigens were evaluated as two indicators of functional immunity. Following adjustment for disease status, demographic factors, and treatment variables, the analysis demonstrated that the women who stated more significant importance of S/R in their reports had increased circulating white blood cell counts and total lymphocyte levels. An analysis of lymphocyte subsets revealed that women with higher reported levels of S/R had increased counts of both helper T-cells and cytotoxic T-cells. Moreover, there was also a significant positive relationship between recurrent attendance at religious or spiritual meetings and amounts of helper T cells. However, in contrast to the author's original hypothesis, delayed-type hypersensitivity (DTH) responses to skin test antigens were greater in the participants who reported less recurrent attendance in spiritual meetings.

Sephton, et al. 's[8] findings indicate that S/R appears to contribute to improved immune responses in patients facing serious illness. They suggested that were the study to be reproduced, improvements could include diversifying the ethnic backgrounds of the subject pool, as well as ensuring that both immunological and self-reported data were collected on the same date. They suggested that future research might aim to investigate this area through longitudinal studies, and perhaps by taking a closer look at the impact of different types of coaxial support on immunity. Overall, the study highlights the potential influence of S/R on physiological health, suggesting that spiritual expression may play a role in supporting immune function in patients with metastatic breast cancer.

Role of Spirituality/Religiosity in Cancer Patients' Quality of Life

Krupski, et al.[9] investigated the influence of S/R on the health-related quality of life (HRQOL) in men with early-stage prostate cancer. The study participants included ethnically varied, underserved, or impoverished men who were receiving state-funded prostate cancer treatment. Ultimately, two hundred and twenty-two subjects participated in the study. The subjects were all residents of California without health insurance and with a household income lower than 200% of the Federal Poverty Level.

Standardized instruments assessed spirituality, anxiety, general and disease-specific HRQOL, symptom burden, and emotional health. Interviews were conducted over the phone in both English or Spanish, and self-reported surveys were given to the participants to gather information such as levels of S/R, anxiety, symptoms, general HRQOL, and disease-specific HRQOL. General HRQOL was determined through the RAND Medical Outcomes Study Short From 12-Item Health Survey, version 2 (SF-12). This tool separated HRQOL into both mental and physical constituents. Disease-specific HRQOL was examined using the UCLA Prostate Cancer Index short form (PCI-SF) (Litwin and McGuigan, 1999). This tool allows the participant to report well-being with regard to urinary, bowel function, and sexual function and burden. Anxiety, emotional well-being, and symptom distress were all evaluated through participants' answers to the Likert scale, the Medical Outcomes Study 5-item Mental Health Index (MHI-5), and the Symptom Distress Scale (SDS), respectively. S/R was determined through the use of the 12-item Functional Assessment of Chronic Illness Therapy-Spiritual Well being Scale (FACIT-Sp), a commonly used tool to assess levels of spirituality in patients. The FACIT-Sp contains two subscales, with one focusing on faith and the other assessing peace and meaning.

A consistent relationship was found between S/R and the areas examined. In the FACIT-Sp scoring of S/R, covariates included ethnicity, relationship status, education, comorbidities, treatment type, disease stage, and age. Decreased levels of S/R were associated with significantly inferior mental and physical health, more urinary irritations following control for covariates and worse sexual capacities. Moreover, every single

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psychosocial variable investigated demonstrated poorer adaptation in the subjects with decreased levels of S/R.

Given the high survival rates associated with prostate cancer, interventions focused on S/R hold the potential to significantly improve both the physical and psychosocial well-being of patients.

Cotton et al.[10] investigated the impact of spiritual well-being (SPWB) on the functional, emotional, and physical aspects of well-being in the psychological adjustment to cancer. Psychological adjustment is defined by two elements: appraisal, regarding the potential implications of cancer, and the reaction that follows, such as thoughts and actions taken to decrease the threat of the illness. The authors sought to understand the intersection between psychological adjustment, quality of life (QOL), and SPWB in women diagnosed with breast cancer after entering a 12-week program that focused on topics of social support and lifestyle. They hypothesized that there would be a positive association between SPWB and QOL and that SPWB would be positively correlated with psychological adjustment techniques such as a "fighting spirit" and negatively correlated with psychological adjustment techniques such as helplessness, hopelessness, and anxiety.

Their study consisted of one hundred forty-two women diagnosed with invasive breast cancer within the past 18 months or those with recurrent or metastatic disease. The women in the study were fluent in English and were 84% Caucasian, 9% Asian/Pacific Islander, 7% African-American, and 2% Hispanic. The mean age of the participants was 49 years old, with ages ranging from 26 to 78 years old. Participants completed questionnaires and tools such as the FACIT-B (the Functional Assessment of Chronic Illness Therapy–Breast) which measured the QOL and illness management of the participants, the FACIT-Sp, the Mini-Mental Adjustment to Cancer scale which assessed the participant's attitude in dealing with cancer, and the Principles of Living Survey which measured religious and spiritual beliefs. Participants completed the questionnaires four times throughout the study: once before starting the program, and then again at each of the 3, 6, and 12-month follow-ups.

The study's results demonstrated significant associations between income, health status, age, and QOL, with Asian Americans having the lowest QOL compared to other ethnic groups in the study. Active religious practice was significantly associated with SPWB. SPWB was shown to have negative associations with negative psychological adjustment styles and positive correlations with QOL and psychological adjustment techniques. Following a hierarchical regression analysis in which variables such as demographics, disease factors, and psychological adjustment techniques were controlled for, SPWB made a small but significant contribution. Psychological adjustment had the largest impact on QOL.

These results reinforce the interconnections between spirituality, QOL, and psychological adjustment, and provide further support for the premise that including elements of spirituality for interested cancer patients, may lead to a better overall QOL.

Miller et al.[11] carried out a secondary study by reviewing the data set of two hundred cancer patients with solid tumors. The patients were adults over the age of 18 years with diagnoses of breast, prostate, lung, renal, or bladder cancer or melanoma, who were in the midst of receiving chemotherapy. They collected demographic information via a self-reported questionnaire on: age, gender, marital status, race, ethnicity, education, and income level. Medical records were examined for the cancer diagnosis, stage, chemotherapy, and co-morbid conditions. Chronic conditions included: obesity (BMI >=30), hypertension, hyperlipidemia, and older age (>65). Points were assigned for each comorbid condition using a modified Charlson-Co-morbidity Index.

Symptoms assessed used a modification based on the Memorial Symptom Assessment Scale, in which patients were given a list of 41 symptoms, asked if these had been present during the past week and if so, to rate their symptom severity based on a Likert-type scale for 1 ("slight") to 4 ("very severe"). For each symptom, patients were to rate how bothered they felt on a scale from 0 ("not at all") to 4 ("very much"). The symptoms of interest included: pain, difficulty sleeping, lack of energy (fatigue), and feeling sad (depression). Patients were also asked to rate how much their symptoms interfered with daily life in the past week. Daily life parameters included: activity, mood, work, social encounters, exercise, and enjoyment, and were rated using the M.D. Anderson Symptom Inventory with ratings from; 0 ("did not interfere"') to 10 ("interfered completely").

Spirituality was assessed using items from the Fox Simple Quality of Life Scale (FSQoLS) in which patients were to rate their level of agreement (1 "strongly disagree" to 5 "strongly agree"), with 25 statements focused on varying dimensions of quality of life such as: health perceptions, life enjoyment, feelings of well-being, and life satisfaction over the past week. From this analysis, spirituality was assessed using an aggregate average score of 4 items: "I am peaceful," "I have faith in a higher power," "My life has meaning," and "I am spiritual."

Of the 200 enrolled patients, 57.5% were female, 97.3% were white, 69.6% were partnered, and the mean age was 60.2 (range 24-89). Cancer stage IV was the most common (47.8%), stage III was the second most common (26.7%), and 16.7% of participants were stage II. All patients were receiving outpatient chemotherapy and were ambulatory. Melanoma was the most frequent type of cancer (36.8%).

After controlling for covariates, the authors found that higher spirituality was found to be significantly associated with lower mean severity ratings for fatigue ($p<0.003$), depression ($p<0.006$), and sleep disturbances ($p<0.004$), and showed a trend toward lower pain severity though this was not statistically significant ($p<0.058$). Higher spirituality was also significantly associated with lower overall symptom interference with life ($p<0.004$). The authors postulated that the beneficial results of higher spirituality may result from the sense of connection to a higher power, which in turn may impact emotional regulation and confer greater resilience in the face of adversity. Higher spirituality may also provide social support for those who are members

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of a spiritual community. The authors encouraged caregivers to address spirituality with their patients as part of comprehensive holistic cancer care.

Choumanova et al.[12] studied the effect of S/R in Chilean women with breast cancer. Breast cancer is the second-most prevalent cancer in Chile, and understanding how factors such as S/R can impact recovery is necessary to support patients in navigating both the physical and emotional challenges of their treatment journey. The study was conducted in Santiago, Chile, where twenty-seven (27) women with breast cancer participated in one-on-one interviews about their experiences. The participants' ages ranged from 39 to 92 years, with a mean of 58.3 years (SD = 11.3). Approximately 51% of the participants were married. In terms of education, nearly half (49%) had not completed high school, 34% were high school graduates, and 17% had attended college. Over half (55%) identified their occupation as homemaker. Regarding religious affiliation, 80% identified as Catholic, 9% as Evangelical, and the remaining participants did not associate with any specific religion. All but two women had completed their oncologic treatments, including radiation therapy and chemotherapy. The "constant comparative method" was utilized to analyze the transcribed interviews to organize salient themes and determine patterns.

There were numerous main takeaways from the interviews. Women's use of S/R throughout their treatment and recuperation was expressed through prayer, faith in God to guide them through the illness to intercede in their experience, and in gaining social support from other members of their faith community. Half (13/26) of the women stated that their breast cancer led to an increased personal emphasis on S/R through a deepened faith in God. One patient stated "[If] I had faith before, now I have double that. I have more faith, more faith in God and in everything that has happened." Around one-third of the patients (8/27) stated that religion and spirituality aided them in building a social network and that they gained social support through their spiritual communities. One participant shared "I started going [to church] more often and began talking to people who were more religious, and I felt better." Nearly all (26/27) of the women agreed with the notion that spiritual faith can aid in recuperation for cancer patients.

Overall, the women saw S/R as a primary resource for themselves and for other women diagnosed with breast cancer for coping and recovering. For many participants, S/R provided psychological comfort, a social community, and resources for managing the emotional burden of their illness. Traditional religious practices such as prayer helped many of the participants reach a sense of calm and helped them cope with distressing thoughts, similar in ways to meditation.

It is interesting to note that while religion often can justify and provide comforting explanations for suffering, very few participants utilized their faith to find deeper reasoning behind their diagnosis. Instead, their focus remained on practical coping, such as praying to God for strength and seeking out support from their churches. This approach reflects coping patterns seen in other underserved populations, where religious institutions often play a vital role in providing necessary support. In communities such as Santiago, Chile, building relationships between healthcare providers and spiritual leaders could also aid in integrating these resources into cancer care.

Majda et al.[13] conducted a cross-sectional study to evaluate the relationship between spirituality/religiosity and quality of life among Polish cancer patients. The techniques that were used to collect the research material were the survey technique and the scaling technique. The study hypothesized that Christian/Catholic spirituality positively influences various aspects of quality of life, including physical, emotional, and social functioning, while also potentially impacting symptom-related quality of life such as fatigue, pain, and other disease symptoms.

The study included 101 participants, including 56 women (55%) and 45 men (45%), from two regions in Poland. The most commonly diagnosed cancers among the respondents were breast, lung, colon, and prostate. Treatments received included surgery (71%), chemotherapy (54%), and radiotherapy (41%). Half of the respondents had completed cancer treatment, which ranged from six months to five years, while the other half were still completing treatment. All participants identified as Catholic.

Data collection was conducted using three tools, the first being the Daily Spiritual Experience Scale (DSES), a tool developed by Lynn G. Underwood. The scale includes sixteen questions, including personal identification of inner peace, giving and receiving compassionate love, gratitude for blessings received, delight, and closeness to God. The tool is unspecific in terms of religion, and the higher the test result within the range of 16 to 94 points, the more spiritual an individual is determined to be. An internal consistency score of 0.94 demonstrates the scale's strong reliability as a valid measurement tool. Factor analysis further supports its two-factor structure across all populations studied to date, including the Polish population.

The next tool, the EORTC QLQ-C30 questionnaire (version 3.0) created by the European Organization for Research and Treatment of Cancer was used to determine the quality of life of cancer patients. The questionnaire includes 30 questions designed to assess various aspects of quality of life. It features six individual items that evaluate the intensity of specific symptoms, such as insomnia, diarrhea, loss of appetite, dyspnea, constipation, and financial difficulties. Three symptom scales are also included, covering fatigue (3 questions), nausea and vomiting (2 questions), and pain (2 questions). Additionally, the questionnaire was organized into five functional subscales: physical functioning (5 questions), emotional functioning (4 questions), role functioning (2 questions), and social functioning (2 questions). The final two questions assessed the respondent's overall health condition and quality of life. The lowest possible score was 30 and the highest was 126 points, but the score was typically calculated in the range of 0-100 points. For questions 1–28, higher scores indicated greater severity of persistent symptoms and lower quality of life. Conversely, for questions 29 and 30, higher scores reflected better functioning.

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The third tool used was the Quality of Life—Cancer-Related Fatigue (EORTC QLQ-FA12) questionnaire developed by the European Organization for Research and Treatment of Cancer (EORTC), utilized to evaluate the level of fatigue related to past or current cancer experiences. The scale comprised twelve questions focused on fatigue across three dimensions: cognitive, emotional, and physical. Responses were rated on a modified 4-point Likert scale with the following options: "not at all" (1), "a little" (2), "quite a bit" (3), and "very much" (4). Scores ranged from 12 to 48, with higher scores indicating greater levels of cancer-related fatigue. In this study, the results were rescaled to a 0–100 point range.

The study found that respondents exhibited a high level of spirituality/religiosity, with an average score of 65.22 (SD = 21.05). Their overall quality of life was moderate, with a mean score of 49.84 (SD = 25.60). Among functional domains, cognitive functioning scored the highest (64.69, SD = 29.65), while emotional functioning scored the lowest (50.17, SD = 30.86). Symptoms that had the greatest negative impact on quality of life were insomnia (46.53, SD = 35.30) and pain (45.71, SD = 34.93), whereas financial difficulties and symptoms like diarrhea, constipation, and nausea/vomiting had the least impact. Regarding fatigue, emotional fatigue was the highest (47.53, SD = 35.83), while cognitive fatigue was the lowest (30.69, SD = 30.16).

Correlational analysis showed that higher spirituality/religiosity was statistically significantly associated with better quality of life ($r = 0.516$, $p < 0.001$), improved physical functioning ($r = 0.196$, $p < 0.048$), role functioning ($r = 0.278$, $p < 0.004$), emotional functioning ($r = 0.312$, $p < 0.001$), and social functioning ($r = 0.351$, $p < 0.001$). At the same time, spirituality/religiosity was negatively correlated with symptom severity, including fatigue ($r = -0.316$, $p < 0.001$), nausea ($r = -0.240$, $p < 0.015$), pain ($r = -0.230$, $p < 0.020$), dyspnea ($r = -0.207$, $p < 0.037$), and insomnia ($r = -0.261$, $p < 0.008$). There were no significant correlations between spirituality/religiosity and cognitive functioning, constipation, or financial difficulties.

Demographically, spirituality/religiosity positively correlated with age ($r = 0.226$, $p < 0.002$) and was higher among women ($z = 2.24$, $p = 0.02$) and respondents living outside large cities ($p = 0.005$). No significant differences in spirituality/religiosity were found based on tumor location, marital status, or education level. These findings underscore the multifaceted relationship between spirituality, quality of life, and symptomatology in cancer patients.

The Majda et al.[13] study demonstrates that Polish cancer patients exhibited high levels of S/R, with noteworthy correlations to better quality of life emotionally, socially, and physically. Respondents also reported moderate overall quality of life, with higher levels of spirituality associated with improved quality of life and lower levels of fatigue.

The authors highlighted a necessity for increased research to explore the complex relationship between S/R and quality of life in cancer patients, especially in diverse cultural contexts. They advocated for the integration of spiritual treatment and conversation into medical education to better address patients' spiritual needs.

Tarakeshwar et al.[14] explored the relationship between quality of life (QOL) and religious coping in 170 patients with advanced cancer. Religious coping was categorized as either positive (e.g., benevolent religious appraisals, the nature of which were not clarified in the study) or negative (e.g., anger at God), and its effect was evaluated across various QOL features, including physical, existential, psychological, and social support. Through structured interviews and validated tools like the Brief Measure of Religious Coping (RCOPE) and the McGill QOL questionnaire, the researchers collected data on religious coping, QOL, self-efficacy, and sociodemographic elements.

Linear regression analyses illustrated that after controlling for sociodemographic factors, self-efficacy, and lifetime history of depression, greater use of positive religious coping was associated with better overall QOL, especially in existential and support dimensions. Conversely, greater use of negative religious coping was associated with poorer overall QOL, particularly in psychological and existential domains. These findings demonstrated the twofold impact of religious coping strategies on patients' QOL, with positive approaches offering benefits and negative strategies potentially exacerbating suffering.

The authors concluded that religious coping significantly influences QOL for patients with advanced cancer, emphasizing the importance of understanding and addressing the type of coping strategies employed. Positive religious appraisals were associated with better QOL. These insights lend support for integrating spiritual evaluations and conversations into cancer treatment to enhance holistic patient care.

Cannon et al.[15] evaluated follow-up care in 551 adult cancer survivors via a self-administered questionnaire, at three time periods: baseline (August 2008), 6 months (February 2009, and 12 months (August 2009). Participants had been seen at the University of Nebraska Medical Center between March 2006 and July 2008 and were at least 19 years of age. Spirituality was assessed using the Functional Assessment of Cancer Therapy Spirituality Scale (FACT-SP) at baseline, and subsequently categorized into high or low-spirituality groups. Religiosity was categorized into two domains: belief and practice, measured via a religiosity scale. A 9-point Likert scale ranged from 1 ("not at all or have no religion") to 9 ("extremely, my religious faith influences all that I do"). These groups were categorized into low influence (scores 1-3), moderate influence (scores 4-6), and high influence (scores 7-9). For religious practice, the question "on average, how many times per month do you attend any type of religious service?" was used. Response options ranged from 0 to 7+ and the group was divided into low practice (scores 0-3) and high practice (score 4). Belief and practice were combined. Survivors with low religious belief and low religious practice were considered low religiosity, and those with high scores on

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religious practice or moderate to high on religious belief were considered high religiosity.

Four groups were formed as follows: i) low spirituality low religiosity, ii) low spirituality high religiosity, iii) high spirituality low religiosity, and iv) high spirituality, high religiosity. Physical and mental quality of life were measured by the Short-Form-12 Health Survey (SF-12), which consisted of a 12-item questionnaire providing both physical and mental component scores. The authors found statistically significant, independent effects of the S/R index and of time, on physical and mental quality of life (QOL). Physical QOL of cancer survivors in the low spirituality and low religiosity groups was significantly lower than those with high spirituality and high religiosity ($p=0.02$). High spirituality high religiosity patients had better physical QOL than low spirituality high religiosity patients ($p<0.0001$). The mental QOL of cancer survivors with low spirituality and low religiosity was significantly lower than patients with high spirituality and high religiosity ($p <0.0001$). And, mental QOL in cancer survivors who showed high spirituality was significantly higher than those with low spirituality, independent of level of religiosity ($p<0.0001$).

Authors noted an overall decrease in survivors' physical QOL over the study period, as one might expect with cancer, whereas mental QOL improved over time independently of their level of spirituality and religiosity. The benefits of higher spirituality tended to persist; survivors with higher spirituality continued to have an upward trend in their mental QOL scores than survivors with lower spirituality. The authors stated that their findings add evidence for the importance of addressing the spiritual needs of their patients as essential components in comprehensive care. They suggested that the topic may be approached by asking: "Spirituality often influences how people deal with illness. How if at all, has your spirituality influenced how you have dealt with your medical condition?" This would enable the identification of needs and lead to provision of, or referral for more tailored, effective interventions. The finding of beneficial effects of spirituality independent of religiosity on QOL may mitigate clinician's concerns about the role of religion in medical care.

Role of Spirituality/Religiosity in Cancer Patients' Existential Constructs

Gorji et al.[16] performed a systematic review of the relationship between spirituality/religiosity (S/R) and death anxiety (DA) in cancer patients. They defined death anxiety as a psychological concept involving fear and apprehension of one's death or fear of the dying process, which encompasses emotions and thoughts related to the awareness of one's mortality. Developing a life-threatening disease such as cancer can trigger DA. The authors stated that S/R is one of the most important influences on DA. For their study, the authors performed a search of literature databases and selected 15 studies from an initial 2,463, based on alignment with the purpose of the research and methodological design. A total of 2,438 cancer patients were enrolled in the 15 studies.

Half the studies used the Allport-Ross religious orientation scale to assess religiosity. This test involves statements which the patient may score from 1 ("strongly disagree") to 5 ("strongly agree"), such as: "The purpose of prayer is to secure a happy and peaceful life," 'It is important for me to spend periods of time in private religious thought and meditation." Most studies used Templer's Death Anxiety Scale to assess DA. This is a 15-item scale that measures individual perceptions of death anxiety, by rating statements based on whether one strongly agrees or strongly disagrees with questions such as: "I am very much afraid to die," "The thought of death frequently enters my mind," "It makes me nervous when people talk about death." The included studies occurred in the following countries: Iran, Canada, China, India, and Egypt.

The authors reported that, while there were some conflicting results, most of the studies found a significant negative relationship between S/R and DA. Possible mitigating effects of S/R on death anxiety were enumerated as: belief in an afterlife may give comfort to believers and diminish the fear of death; the sense of meaning and purpose in life may reduce existential death anxiety and serve as a buffer against the fear of death; a provision of a strong social support network within the religious community can offer emotional, psychological and protective support.

To address the conflicting findings in some of the studies, in which DA was positively correlated with S/R, the authors offered the explanation that if DA motivates religiosity, then there will be a positive relation with DA whereas, if religiosity reduces DA, then a negative correlation will ensue. They pointed out that people approach S/R in their own individual ways and while some may find comfort in their beliefs, others within the same religious group may not. However, given the overall promising findings that S/R was negatively correlated with DA, the authors recommended that healthcare professionals' education should include awareness of the role of S/R in coping with illness, such that providers can engage in open and supportive conversations with patients, thereby promoting a more empathetic healthcare environment.

Almaraz et al.[17] studied 177 people diagnosed with cancer in Spain, a largely Catholic culture. The study group was composed of 88 men and 89 women, of ages spanning from 18 to 81 years. Educational level ranged from none to postgraduate with masters or doctoral degrees. Employment status included retired, not working, and currently working individuals. Socioeconomic level ranged from low to high with the majority of participants in the average income level. The types of cancer included: breast, leukemia colon, lung, and lymphomas.

The authors measured Trust in God via the Brief Trust/Mistrust in God Scale, Spanish version, which uses a Likert-type scoring with five answer options from "not at all" to "very much" in response to participants' degree of belief toward an item. The trust in God factor includes such statements as "God cares about my deepest concerns," and mistrust includes "God doesn't care about me." They also used the Positive and Negative Affect Schedule to analyze emotions. Positive emotions included items such as "enthusiastic" or "interested" and negative

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emotions used items such as "scared" or "irritable," also via a Likert-type scale with response options from "not at all or very slightly" to "very much." In this assessment, patients indicated whether they felt each of the emotions reflected in the items.

They also used the Multidimensional Scale of Perceived Social Support to assess the amount of social support study subjects felt they received. The scale consisted of twelve items grouped into three different categories: family, friends, and significant others. "There is one person who is a real source of well-being for me" with a Likert format of seven response options from "strongly disagree" to "strongly agree."

The authors found that positive emotions significantly correlated positively with trust in God and social support, while negatively with mistrust in God. Negative emotions correlated significantly and positively only with mistrust in God. They also found that more social support correlated with more positive emotions, while mistrust in God scores were negatively related to positive emotion scores.

The authors mention a seminal work "Duties of the Heart"[18] written by Rabbi Bachya Ibn Pakuda in the 11th century, who established a series of links between Jewish religiosity - specifically trust in God - and psychological and emotional health. While this has not been scientifically investigated until the 21st century, research corroborates Rabbi Pakuda's premise that religious patients who have a positive and trusting relationship with God have greater emotional well-being.

Social support was directly related to positive emotions, and inversely related to negative emotions i.e., social support helps patients regulate the emotional impact of the complexities of navigating the cancer state. Higher levels of trust in God predict lower levels of negative emotions, with the inverse situation occurring with mistrust in God. The authors believe S/R should be addressed in health contexts, as these variables seem to have important repercussions on health.

Discussion

The body of evidence presented in this brief literature review demonstrates a potentially significant role for spirituality and religiosity (S/R) in the cancer experience. Through numerous diverse studies, a recurring theme materializes: S/R seems to have a potent patient impact - on immune function, emotional, physical, and social quality of life, and the ability to express resilience, hope, and faith in addressing emotional issues and forming coping strategies.

One of the most salient findings of this review is a consistent positive association between increased levels of S/R and better quality of life (QOL) during illness. The studies highlighted above illustrate how spiritual practices such as traditional prayer, belief in a higher power, and attendance in religious spaces are connected to enhanced emotional capabilities, lower levels of fatigue, and improved physical and social performance. These findings suggest that S/R provides support for the mental and physical challenges that inevitably arise when navigating life-threatening illness.

Another important determination of this review is the finding that S/R appears to have a significant positive biological impact, as demonstrated in Sephton et. al's[8] investigation into the role of S/R in immune function in women with metastatic breast cancer. The results of their study show that practices such as attending religious services and expressing S/R can positively impact the production of circulating white blood cells and total lymphocyte levels, as well as helper T-cells and cytotoxic T-cells. Their study demonstrates that S/R practices appear to lead to tangible biological effects - strengthened immunity - supporting the idea that spirituality is not simply an abstract construct, but a practice that can manifest in determinable ways within the human body.

Additionally, this review touches on the cultural implications of spirituality, and the significant differences in both the definitions and practices of S/R around the world. In the study conducted by Choumanova, et al.,[12] investigating the impacts of religion and spirituality on Chilean women in coping with breast cancer, the majority of the women described their experience utilizing S/R through prayer, faith in God, and support from others in their faith communities. In Chile, there is far less of a distinction between S/R than in Western countries. Similarly, in Majda et. al,[13] it is emphasized that the definitions of spirituality and religiosity in Poland are also entwined, in contrast with the various Western countries. These discoveries demonstrate that integration of S/R into patient care may optimally require a culturally respectful and inclusive perspective.

One concrete way to facilitate an integration of S/R into cancer patient care is through the education of caregivers early on in the training process (medical school, nursing school, school of social work). By including training on S/R awareness into the standard health caregivers' curricula, more of our future healthcare providers could be more likely to be comfortable with, and better equipped to open meaningful discussions about spirituality. For interested patients, this could pave the way to providing appropriate referrals to hospital team members with expertise in rendering spiritual care, such as the chaplaincy. These issues are beginning to be explored in the healthcare setting (Post et al.[19]).

Yet, integrating S/R into cancer patient care is not without its challenges. Physicians' personal beliefs surrounding S/R may influence their openness to include S/R in treatment discussions, for example, if ethical concerns arise as to how physicians should engage with S/R if it contradicts their own opinions. Moreover, in smaller hospitals with fewer resources, adapting to the diverse spiritual needs of cancer patients, including various religions and even sects within those religions, poses numerous challenges. The obstacle of how to guarantee that all cancer patients get equal spiritual care without imposing particular beliefs remains a significant issue in developing S/R-inclusive treatment plans.

Future research could aim to investigate these obstacles by developing best practices for implementing S/R in healthcare settings while maintaining the integrity of both provider and cancer patient beliefs. Furthermore,

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healthcare institutions could consider policies that allow space for S/R support and culturally respectful care plans. By acknowledging the role of S/R as greater than just an individual's belief system, but a worthy resource for recovery, healthcare professionals can better support interested cancer patients in achieving improved overall quality of life.

Conclusion

The collective findings of this review demonstrate a potentially significant role for spirituality and religiosity (S/R) in the cancer journey. Across numerous studies, S/R surfaces as an apparent source of both spiritual and physical well-being, mental resilience, and improved social connection for patients diagnosed with cancer. The rather consistent association between increased levels of S/R and better quality of life illustrates its importance as a potentially complementary element in cancer patient care. Moreover, evidence suggesting physiological benefits, including improved immune function, fortifies the notion that spirituality may not be merely a psychological construct but a practice with tangible biological benefits.

Furthermore, the cultural specificity of S/R suggests a consideration of a cancer patient-centered approach that respects diverse religious and spiritual beliefs. An integration of S/R into healthcare could ideally be a culturally sensitive practice that is tailored to individual cancer patient's values and perspectives.

While not all authors would agree with a role for S/R in the healthcare setting (Sloan et al.[20]), our findings support our premise that S/R be considered as an important component of holistic cancer patient care. By being comfortable with initiating conversations on S/R, caregivers can identify interested patients, garner spiritual support by referral to trained spiritual caregivers in the hospital chaplaincy; and thereby meet the emotional, as well as the physical needs of their cancer patients, helping them develop a deeper sense of meaning, faith, hope and trust.

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