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Review article

Spiritual and religious interventions as a complementary and supportive therapy in women with breast cancer: an integrative literature review

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Abstract
Introduction: Effective coping mechanisms and available support systems are essential to managing the disease and maintaining the mental health of women with breast cancer. It has been found that spirituality and religion can be an important supportive element in coping with cancer and its consequences.
Aim: To analyse spiritual and religious (s/r) interventions provided by health care professionals to breast cancer patients, and their relationship to physical health, psychosocial, and spiritual outcomes.
Methods: Integrative literature review of systematic literature reviews and/or meta-analysis was chosen. PubMed and Web of Science databases for the period 2013–2023 after entering the keywords "spiritual, religious, existential, positive psychology, mindfulness, interventions, breast cancer, cancer" in English were searched.
Results: The review included 13 systematic reviews and/or meta-analyses (SRMA). Effect of mindfulness intervention was most frequently analysed. S/r interventions significantly associated with improvements in spiritual and existential well-being, quality of life and personal well-being, hope, optimism, cognitive functions and reductions of anxiety, depression, hopelessness, stress, and fatigue. Two SRMA found that s/r interventions were associated with improvements in cortisol levels, inflammatory cytokine activity, and lymphocyte function.
Conclusion: The analysed studies showed that s/r interventions are associated with improved biological, psychosocial and spiritual outcomes, which supports the application of these interventions in clinical practice.

Keywords: Breast cancer; Mental health; Physical health; Quality of life; Spiritual and religious interventions

Introduction

Cancer is a major public health problem and is the leading cause of death worldwide (GBD 2019 Diseases and Injuries Collaborators, 2020). Breast cancer is the most commonly diagnosed carcinogenic disease in women. In 2020, it accounted for 24.5% of the 9.2 million newly diagnosed cancer cases in women and was the leading cause of death in women – 15.5% of the 4.4 million cancer deaths. The incidence and prevalence of breast cancer is increasing, particularly in highly developed countries and as women age (Sung et al., 2021). Tremendous advances have been made in cancer treatment, yet cancer is accompanied by limitations in physical function, impaired psychological and social functioning, or an overall lower quality of life (Firkins et al., 2020). As early screening and treatment of cancer continues to increase, so too does the number of people who are long-term survivors of their disease. Quality of life in cancer patients has been shown to be an excellent indicator of the impact of disease and treatment, as well as a predictor of cancer prognosis (lower quality of life is associated with shorter survival) (Cheng et al., 2018; Firkins et al., 2020). There is now growing scientific evidence of the importance of integrating comprehensive care programmes (*e.g.*, symptom management, psychological and social support, education, coaching) focused on quality of life for cancer patients. Factors influencing cancer patients' quality of life may also include spiritual and/or religious interventions, and it is therefore desirable to investigate their impact on cancer patients' physical, psychosocial, and spiritual quality of life (Cheng et al., 2018; Firkins et al., 2020).

Spirituality is considered the core of human existence, a deeply personal and individual search for the transcendent – the sacred, the ultimate truth, the ultimate meaning, which is experienced and expressed through a connection with the sacred source, with oneself, with other people and with nature (the universe). Spirituality as a uniquely human experience includes beliefs (cognitive aspects – spiritual, religious beliefs, rules, regulations), experiences (affective aspects), and practices (behavioral aspects) related to the transcendent (Sováriová

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Soósová, 2022). Religion tends to be defined in the health literature as an organized or institutionalized system of beliefs, practices, and symbols that attempts to provide concrete answers to general spiritual questions and needs of humanity; its purpose is to facilitate a rapprochement with the transcendent (God, Higher Power, ultimate truth), and to foster an understanding of relationship and responsibility to others while living together in community (Koenig, 2012; Sováriová Soósová, 2022).

Spirituality and religion (s/r) can influence physical and mental health through a variety of mechanisms. As suggested by the results of various studies (Koenig, 2012; Lucchetti et al., 2021; Rim et al., 2019; Simão et al., 2016; Sováriová Soósová, 2022), positive physical and mental health outcomes are mainly related to positive representations of the transcendent. That is, religious belief systems about God as a loving, caring, and forgiving being, higher frequency of s/r experiences with a positive charge (*e.g.*, experiencing God's presence, enjoying this connection, experiencing God's love, forgiveness), s/r practices (*e.g.*, participation in worship, prayer, meditation, s/r chanting), and positive religious coping improve physical health (*e.g.*, stress hormones decrease, dopamine and serotonin levels increase), mental health (*e.g.*, anxiety and depression are alleviated), and increase life satisfaction and quality of life. On the other hand, negative s/r representations (*e.g.*, perceiving God as punishing, unforgiving, damning, experiencing anxiety and fear of abandonment by God, experiencing anger at God) are more often related to negative affective expressions, lower quality of life or personal well-being.

Several systematic reviews and meta-analyses focusing on patients with cancer have shown a positive relationship between s/r and physical health (Jim et al., 2015), mental health (Salsman et al., 2015), or social role fulfilment (Sherman et al., 2015). Positive s/r representations contribute to enhancing hope and meaning in life, improving life satisfaction or quality of life, as well as improving physical health outcomes (Brandão et al., 2021; Wnuk, 2022). Findings from previous studies point to the need for the provision of culturally sensitive spiritual and/or religious care at all stages of illness, from diagnosis to end-of-life care for cancer patients. Spiritual and religious interventions have some potential to alleviate suffering, and improve quality of life, mental health, and spiritual well-being in patients with cancer (Bauereiß et al., 2018; Kruizinga et al., 2016; Xing et al., 2018) or in ill individuals at the end of life (Dos Santos et al., 2022). However, there is less scientific evidence evaluating the effect of s/r interventions on the physical, psychosocial and spiritual health of breast cancer patients. With this in mind, the aim of this integrative review study was to analyse s/r interventions delivered by health professionals to breast cancer patients and their relationship with physical health, psychological, social and spiritual outcomes.

Materials and methods

To conduct the review study, we chose the integrative literature review format (Souza et al., 2010) for quantitative studies. In conducting the review, we followed the recommended guidelines for review studies according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the Joanna Briggs Institute (Aromataris et al., 2015), which includes 5 steps: defining the clinical question, formulating inclusion and exclusion criteria for the study search, defining the search and study selection strategy, extracting and analysing data from the selected studies.

To identify studies, the following *question* was formulated: What are the relationships between spiritual/religious interventions and physical, psychosocial, and spiritual outcomes in breast cancer patients?

Inclusion and exclusion criteria were established according to the format – participants, design, and context:

Participants – target group: adult female patients aged 18 years or older with a diagnosis of breast cancer (stage I to IV) as defined by the American Joint Committee on Cancer (Amin et al., 2017). The target group was not limited by type of treatment, age, or location – the facility where the s/r interventions were provided. Patients with other cancer were excluded.

Concept – key concept: spiritual/religious interventions (Table 1), their impact on physical, psychosocial and spiritual health and life outcomes for patients with breast cancer diagnosis. Outcomes included laboratory test results, presence of disease symptoms (*e.g.*, pain, fatigue, nausea, vomiting, diarrhea, sleep disturbances, *etc.*) based on self-reported standardized questionnaires or physician assessment, quality of life, personal well-being (subjective, psychological, general, existential, spiritual), anxiety, depression, positive emotions (optimism, happiness, joy), hope, and hopefulness, respectively, as well as the presence of a positive emotion (*e.g.*, hopefulness, happiness, joy), hopelessness, level of stress or distress, cognitive function, level of self-esteem, self-efficacy, social support based on self-assessment standardised questionnaires or physician assessment.

Context – type of studies: only systematic reviews (SRs) and/or systematic reviews and meta-analyses (SRMAs), which mostly analysed randomized clinical trials, clinical or quasi-experimental studies, were included. Exclusion criteria included: study protocols, research reports, qualitative studies and meta-analyses, SRs and/or SRMAs evaluating the impact of s/r interventions only on patients with cancers other than breast cancer.

Search strategies – the search for studies was conducted in PubMed and Web of Science databases by entering the following keywords and their combination: (spiritual interventions) OR (religious interventions) OR (religious interventions) OR (positive psychology intervention) OR (existential interventions) OR (mindfulness interventions) AND (breast cancer) AND (cancer). The search was limited by the time period 2013-2023, English language, availability of full-text peer-reviewed systematic reviews and/or meta-analyses that analysed randomised clinical trials, clinical or quasi-experimental studies.

Studies were *selected* on the basis of the criteria set out above. The search and selection process reflected the recommendations of PRISMA (Diagram 1).

Data extraction and analysis – the following data were extracted from the selected systematic review studies and/or meta-analyses: author name and year of study publication, SRMA study type, number and type of studies included in the SRMA, types of s/r interventions (Table 2), and outcomes relative to the clinical question asked. We also assessed the countries where the studies were conducted, the sample size, the type of intervention program – length of intervention sessions, frequency, and overall duration of the program.

Results

Thirteen studies were included in the review (Table 2), five SR and eight SRMA. These 13 studies were based on a total of 183 studies, 161 of which were randomized and 17 clinically

Table 1. Spiritual and religious interventions (de Diego-Cordero et al., 2022; Dos Santos et al., 2022; Sováriová Soósová, 2022)

Spiritual interventions	Religious interventions
Spiritual evaluation, the faith of a human being.	Religious assessment, patient's religion.
Fostering relationships with sacred source, with each other, with self, with others, with nature: Encouraging spiritual exploration, suggesting spiritual resources, providing spiritual counselling, fostering spiritual community, providing inspirational books, videos, clips.	Fostering relationships with sacred source, with self, with others, with nature in the context of the individual's religion: prayer, scripture reading, uplifting rituals, church attendance, meditation, providing inspirational religious books, videos, clips based on the patient's religious beliefs.
Existential and positive psychological interventions: interventions to enhance perception and consciousness aimed at stress reduction and coping with illness, relaxation and visualization techniques, meditation, yoga, therapy to promote meaning in life, hope, and forgiveness, dignity therapy, reminiscence, re-evaluation of life through narrative, writing. Art therapy (through art, music, *etc.*).	Promoting meaning in life, hope and forgiveness based on the patient's religious beliefs.
	Offering religious resources, religious community support.
	Referrals for conversations with affiliated religious leaders, pastoral counselling.
	Religious art therapy, listening to religious music, *etc.*

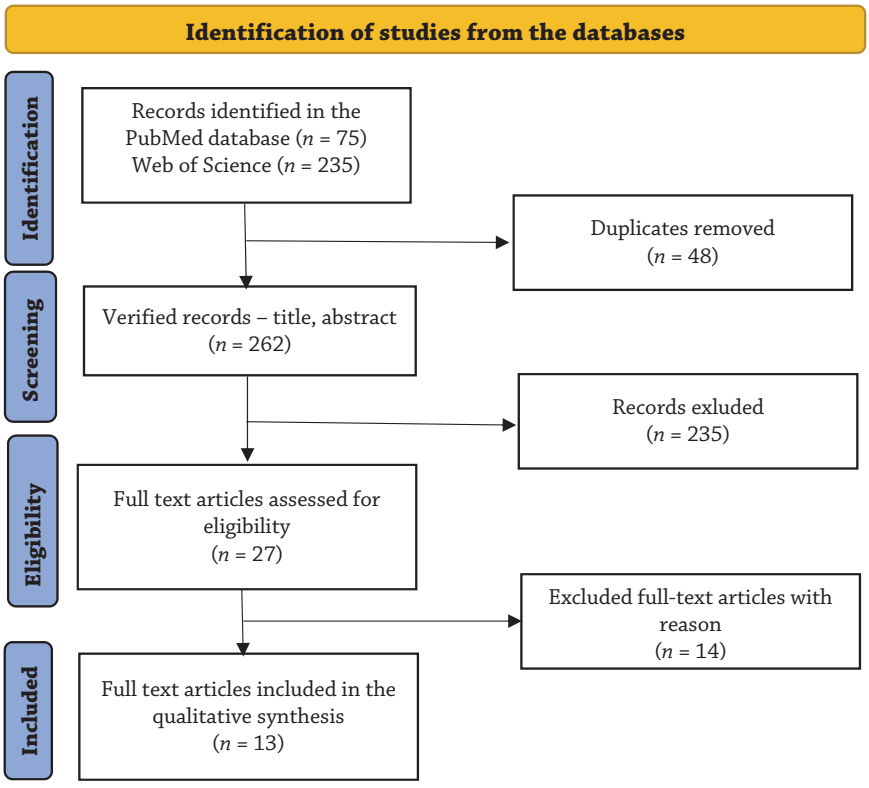

Diagram 1. PRISMA flow diagram

controlled trials (Table 2). Two SRs analysed different types of s/r interventions, nine SRMAs analysed only the effect of mindfulness-based stress-reduction and illness-management interventions, and two evaluated the effect of yoga. The number of participants (total treatment and control group) in each study ranged from 9 to 646. Most of the breast cancer patients were recruited to the studies at hospitals, clinical research centers, private clinics, and health centers, through mailings or advertisements. Most of the studies were conducted in the North American continent in the United States of America and Canada, then in Asian countries (China, Korea, Japan, Iran, and Taiwan), European countries (United Kingdom, Norway, Sweden, Germany, Netherlands, Belgium, Portugal, Spain, Slovenia, and Poland), Turkey, Brazil and Australia.

The types of s/r interventions implemented for breast cancer patients are shown in Table 2. The most frequently applied interventions were mindfulness-enhancing therapies, mindfulness aimed at stress reduction and disease management, yoga, meaning-making interventions, relaxation and visualization techniques, s/r interventions (contemplation, prayer, promotion of s/r rituals, church visits, meditation, and forgiveness promotion...), therapy to promote hope, reminiscence therapy (expression of life story), art therapy. The length of each intervention session, the total duration of the intervention program, and the follow-up of the results after the end of the program were not clearly described in all SR-MAs. One intervention session took at least 20 minutes, the longest 4 hours, but most often lasted 1 to 2 hours. Meetings

were usually conducted once a week. The shortest intervention programme lasted 3 days (in only one case) and the longest 37 weeks (in only one case). Intervention programmes most often lasted 6 to 8 weeks. Follow-up of the results was usually carried out after the end of the intervention programme and then at different intervals after the first to 24th month, so that immediate or short-term results (immediately after the end of the programme), medium-term effect (usually three months to six months after the end of the programme), or long-term effect of the therapy (12 to 24 months) could be monitored. The implementation of s/r interventions involved professionally trained professionals – most often psychologists, followed by nurses, psychiatrists, oncologists, s/r leaders/priests, or multidisciplinary teams without further specification of the intervening professionals.

The bio-psycho-social and spiritual health outcomes assessed in participants after the intervention are shown in Table 2. Two SRMAs showed improvements in neuroimmunological indicators (*e.g.*, cortisol levels, cytokine activity, lymphocyte function, *etc.*) related to the application of s/r interventions, particularly therapies aimed at enhancing mindfulness and awareness. In particular, s/r interventions were significantly associated with improvements in spiritual and existential well-being, quality of life and subjective well-being, cognitive function, hope and optimism, and reductions in anxiety and depression, hopelessness, and stress in women with breast cancer.

Table 2. Characteristics of the studies

Authors, year of study publication	Type of study	Number and type of research studies	Types of spiritual/religious interventions (number)	Biological and physical outcomes	Psycho-social and spiritual outcomes
Casellas-Grau et al., 2014	SR	4 RCT 9 quasi experimental studies 3 qualitative studies	Mindfulness-based therapy aimed at stress reduction, coping with illness (7) Meaning-making therapy (3) Spiritual/religious interventions (such as contemplation, meditation, prayer, promoting forgiveness, faith in God) (2) Hope therapy (1) Interventions aimed at expressing positive emotions, life story, experience of carcinogenic disease through writing, art therapy, narrative talk (3)	↑ functional ability, ↓ fatigue	↑ QoL, ↑ happiness, ↑ hope, ↑ life satisfaction, ↑ existential well-being, ↑ spiritual well-being, ↑ psychological well-being, ↑ physical well-being, ↑ self-esteem, ↑ optimism, ↑ self-efficacy, ↑ hope, ↑ perceived social support, ↓ stress, alleviation of hopelessness and powerlessness
Castanhel and Liberali, 2018	SRMA	6 RCT 1 clinically controlled study	Mindfulness-based therapy	↓ fatigue	↓ depression, ↓ anxiety
Chang et al., 2021	SRMA	11 RCT	Mindfulness-based therapy	↓ or ↑ or no effect TNF-α, ↓ or ↑ IL-6, ↑ IFN-γ, ↑ B lymphocytes, ↑ CD4+/CD8+, ↓ fatigue, ↓ pain improved sleep quality	↑ QoL, ↑ subjective well-being, ↑ emotional well-being, ↑ spiritual well-being, ↓ depression, ↓ anxiety, ↓ distress, ↑ cognitive function
Chang et al., 2023	SRMA	10 RCT 3 nonRCT	Mindfulness-based therapy with elements of cognitive-behavioural therapy	↓ pain Heterogeneous outcomes in sleep	↓ depression, ↓ anxiety, no effect on QoL
Cifu et al., 2018	SR	5 RCT 1 clinically controlled study	Mindfulness-based therapy	–	↑ cognitive function
Cramer et al., 2017	SRMA	23 RCT	Yoga	Short-term ↓ or no effect on fatigue Short term improvement in sleep quality	↑ QoL, ↓ depression, ↓ anxiety
El-Hashimi and Gorey, 2019	SR	8 RCT	Yoga	↓ fatigue	↑ QoL, ↓ depression, ↓ anxiety
Haller et al., 2017	SRMA	10 RCT	Mindfulness-based therapy	Short-term ↓ fatigue Short-term improvement in sleep quality	↑ health related QoL, ↓ stress, ↓ depression, ↓ anxiety

Table 2. ***(continued)***

Authors, year of study publication	Type of study	Number and type of research studies	Types of spiritual/religious interventions (number)	Biological and physical outcomes	Psycho-social and spiritual outcomes
Hulett and Armer, 2016	SR	19 RCT 3 nonRCT	Mindfulness-based therapy focusing on cancer recovery (2) Mindfulness-based therapy focusing on stress reduction (7) Cognitive interventions on stress management (2) Body-mind-spirit interventions (1) Relaxation and visualization interventions, guided imagery (3) Yoga (5), Tai Chi (1), Qigong (1)	↓ IL-1, ↓ IL-1β, ↑ IL-2, ↑ IL-4, ↓ IL-4, ↓ IL-6, ↓ IL-10, ↓ immunoglobulin A (IgA), ↑ cellular activity of cytotoxic lymphocytes (natural killer), ↓ cortisol, stable cortisol level or no change, stable level or ↓ tumour necrosis factor-α (TNF-α), ↑ CD56, ↓ blood pressure, pulse, respiration, ↑ cytotoxic lymphocytes, ↑ T lymphocytes, Th1/Th2, ↑ CD4+/CD8+, ↑ Interferon-γ (IFN-γ), stable (preserved) telomere length, stable or unchanged levels of CD4+ T lymphocytes, CD3+ complement (T1/T2) ↓ severity of symptoms ↓ fatigue ↑ functional ability	↓ depression, ↓ anxiety, ↓ distress, ↓ stress, ↓ rumination, ↑ QoL, ↓ coping, ↑ relaxation, ↑ spiritual growth, ↑ mind strengthening, ↑ social support, ↑ cognitive function, ↑ affect
McCloy et al., 2022	SRMA	21 RCT 2 reports of studies	Mindfulness-based therapy	no effect on sleep quality ↓ fatigue	↓ depression, ↓ anxiety, no effect on QoL
O'Neill et al., 2020	SRMA	24 RCT	Yoga	Heterogeneous outcomes in fatigue	↑ QoL
Schell et al., 2019	SRMA	10 RCT	Mindfulness-based therapy	↓ fatigue, improved sleep quality	↑ QoL, ↓ depression, ↓ anxiety
Zhang et al., 2019	SR	10 RCT 5 clinically uncontrolled studies	Mindfulness-based therapy	↓ pain	↑ QoL, ↑ emotional well-being, ↓ depression, ↓ anxiety

Note: SR – systematic review, SRMA – systematic review and meta-analysis, RCT – randomised controlled trials, nonRCT – non-randomised controlled trials, IL – interleukin, TNF-α – tumour necrosis factor-α, IFN- γ – interferon gamma, QoL – quality of life, ↑ – increase, growth, ↓ – decrease, decline.

Discussion

The aim of this integrative review study was to assess the most common spiritual and religious interventions provided by health care professionals to breast cancer patients and the relationship of these interventions to physical, psychosocial, and spiritual outcomes. The most frequently applied intervention was therapy aimed at developing and enhancing mindfulness and awareness focused at stress reduction and coping with illness. Most of the analysed s/r interventions had an impact on improving the quality of life and mental health of breast cancer patients and short-term relief of adverse physical symptoms of the disease.

Mindfulness-based interventions

The most frequently applied interventions were therapies aimed at developing and strengthening mindfulness focused at stress reduction and coping with illness, strengthening mindfulness-based interventions with elements of cognitive-behavioural therapy, yoga, relaxation, and visualisation techniques, *i.e.*, methods of positive psychology. Therapies focused on increasing mindfulness, aimed at stress reduction and disease management are rooted in contemplative spiritual traditions, traditions of Eastern philosophies of Buddhism, where the experience of mindful perception and awareness is actively cultivated (Hulett and Armer, 2016; Khoury et al., 2015; van Agteren et al., 2021). This therapy is traditionally contemplative, non-judgmental, accepting the patient's world view, the patient, and is focused on learning relaxation techniques and meditation. Meditation practice often focuses on awareness of one's own breathing or mindful movement activity. This usually leads to a state of relaxation and mindful detachment. These interventions may include meditation, yoga, Tai Chi, *etc.* (Hulett and Armer, 2016; van Agteren et al., 2021). Yoga is a traditional spiritual practice with roots in Indian philosophy. It includes a complex set of interventions that recommend an ethical way of life, spiritual practice, physical activity, breathing exercises and meditation (Cramer et al., 2017; El-Hasimi and Gorey, 2019). While yoga in North America and Europe focus-

es mainly on posture, many traditional types of yoga involve only meditation or breathing techniques (Cramer et al., 2017; El-Hasimi and Gorey, 2019). Another similar method that has been applied is relaxation and visualization techniques. These usually involve a period of relaxation (*e.g.*, 20 minutes) during which the subject is encouraged to create a mental image of the desired goal or outcome. For example, subjects are induced to create a mental image in which their tumour is attacked by the immune system and then imagine the breast completely cured. These techniques include the use of progressive muscle relaxation methods, guided imagery, meditation and deep breathing (Hulett and Armer, 2016). These methods have contributed to improved psychosocial and spiritual outcomes for breast cancer patients, as well as short-term improvements in physical health outcomes. Several studies have highlighted similar positive effects of these interventions in patients with other carcinogenic diseases (Bauereiß et al., 2018; Kruizinga et al., 2016; Xing et al., 2018).

Religious interventions

Spiritual interventions of a religious nature, *e.g.*, contemplation (focused thinking, contemplation, reflection, introspection), prayer, support for religious rituals, participation in worship, meditation, support for forgiveness, contributed particularly to improved quality of life, overall well-being, happiness, life satisfaction and hope in breast cancer patients (Casellas-Grau et al., 2014; Hullet and Armer, 2016). The length of each intervention session ranged from 60 to 90 minutes. Meetings were conducted at least once a week for eight weeks. The effect of these interventions, although small, was statistically significant (Bauereiß et al., 2018; Casellas-Grau et al., 2014; Hullet and Armer, 2016; Kruizinga et al., 2016; Xing et al., 2018). Similar s/r interventions have been shown to be beneficial in relation to quality of life and subjective well-being, health-promoting activities, physical and mental health (alleviation of anxiety, depression), also in patients with other carcinogenic diseases (Bauereiß et al., 2018; Kruizinga et al., 2016; Xing et al., 2018). The mechanism of action of some spiritual/religious interventions (*e.g.*, prayer, meditation, attending a religious service, reading, or listening to religious texts lasting at least 60 minutes) has been elucidated by some neurobiological or neurotheological research (McClintock et al., 2019; Newberg, 2014, 2017; Rim et al., 2019). These state that during the above religious interventions, some parts of the central nervous system (*e.g.*, frontal lobes, amygdala) and the autonomic nervous system are involved, selected neurotransmitters are released, and the endocrine and immune systems are activated. For example, the frontal and orbital prefrontal lobes are activated, leading to increased attention, modulation of prosocial behaviour, optimism, and the construction of meaning in life. Involvement of the amygdala led to hypothalamic stimulation, activation of the parasympathetic nervous system with consequent muscle relaxation and decline in vital functions, as well as repeated seeking of religious activities, as the amygdala is also a modulator of addictive behaviour. In the course of the aforementioned religious practices, there was also a decrease in stress hormones and an increase in dopamine and serotonin, responsible for *e.g.* calming and inducing positive emotions.

Meaning-making interventions

Meaning is an integral part of human life. People need to understand the meaning and significance of their existence (Frankl, 2011). The experience of cancer disrupts an individual's personal world, can change their internal value system, and disrupt the belief that life is orderly and meaningful. Patients often question why it is that they have to struggle with cancer, with pain and suffering, and reflect on the meaning of their illness and suffering (Quinto et al. 2022). Different spiritual and religious traditions may also provide answers to existential questions about the meaning of life and suffering (Almeida et al., 2022; Sováriová Soósová, 2022). If patients are able to find meaning in their suffering, they are better able to cope with their illness, experience less anxiety and depression, and their level of personal well-being increases (Almeida et al., 2022; Frankl, 2011; Quinto et al. 2022). Interventions to promote meaning in life (Breitbart et al., 2015; Casellas-Grau et al., 2014; Kruizinga et al., 2016; Lee et al. 2006) are usually led by a clinical psychologist, psychiatrist, or other health care professional (nurses) with experience treating patients with advanced cancer. Individual sessions for breast cancer patients lasted approximately 90 minutes and were conducted once a week for at least 8 weeks. They included an assessment of current cognitive and emotional responses to the diagnosis. The follow-up session was oriented toward exploring past significant life events and assessing the impact of past coping strategies on the current experience of the breast cancer diagnosis. The final sessions were a discussion of current life values and priorities in the context of acknowledged mortality. However, some strategies, psychotherapeutic practices to promote meaning have not been standardized for empirical testing (Lee et al., 2006). Systematic reviews and meta-analyses (Almeida et al., 2022; Bauereiß et al., 2018; Kruizinga et al., 2016; Xing et al, 2018) show a positive relationship between existential psychology methods, specifically meaning-making therapies, and achieving more positive outcomes in physical health (reduction of disease symptoms) as well as quality of life, personal well-being, and positive emotions in patients with cancer, including women with breast cancer (Casellas-Grau et al., 2014). In light of this, meaning-making interventions are recommended for use with cancer patients, including breast cancer patients, when dealing with existential issues (Almeida et al., 2022; Breitbart et al., 2015; Casellas-Grau et al., 2014).

Hope therapy

Hope therapy was originally developed to optimize successful goal attainment by increasing hopeful thoughts (Cheavens and Whitted, 2023; Rustøen et al., 2011). This therapy is administered individually or in a group setting in sessions ranging from one to 10 sessions over eight weeks. One intervention session lasted approximately 90 min. Hope therapy specifically focuses on creating realistic goals in relation to future events or outcomes and finding ways to achieve them. During the daily reflections, participants are asked to describe their goals, think about plans and obstacles, and reflect on their feelings about these goals. Awareness and exploration of spiritual and/or religious sources of strength and hope are also part of the therapy (Cheavens and Whitted, 2023; Rustøen et al., 2011). It is necessary to draw attention to false hope, which is based on illusions, inadequate goals, and inappropriate strategies to achieve them. Such hope is counterproductive, which is why we do not support patients in it. Hope therapy is usually provided by psychologists, but also by nurses or trained health professionals working in mental health (Cheavens and Whitted, 2023). We have only reported the use of this type of therapy in breast cancer patients in one SRMA (Casellas-Grau et al., 2014). The increase in studies validating the efficacy of hope therapy has only occurred in the last five years and there have been very few in patients with cancer (Cheavens and Whitted, 2023). There is not yet enough conclusive scientific evidence of

the efficacy of this therapy in breast cancer patients, so further testing of the effectiveness of this therapy is essential.

Reminiscence therapy

Reminiscence therapy, a life review method, has also been applied in s/r interventions for breast cancer patients. Three basic types of reminiscence therapy can be used in clinical practice: simple reminiscence, life review, and life review therapy (Sun et al., 2023). Simple reminiscence usually focuses on one's own pleasant and happy memories. It can be carried out individually, in pairs or in groups, especially by nurses and social workers in the community, nursing homes and other places. Life review is used to explore both positive and negative life experiences. It is usually carried out on an individual basis by an advanced interventionist such as a psychiatrist or experienced nurse. Life review therapy requires a psychotherapist with appropriate professional skills to review negative memories and reconstruct them in chronological order with a more optimistic view of life (Sun et al., 2023). Reminiscence therapy has been shown to contribute to improved quality of life and emotional well-being in breast cancer patients in particular (Casellas-Grau et al., 2014). However, the number of scientific studies is limited in this area of investigation, so we cannot clearly formulate conclusions about the effectiveness of this therapy in women with breast cancer. Other studies conducted in cancer patients have shown the benefit of reminiscence therapy for improving mood, alleviating anxiety and depression, and improving overall well-being (Bauereiß et al., 2018; Kruizinga et al., 2016; Sun et al., 2023), as well as in different groups of healthy and ill individuals (Hallford et al., 2022; Saragih et al., 2022).

Art therapy

Art therapy is a complementary and supportive therapy used in medical care. It includes various creative techniques, *e.g.*, visual arts, music, writing poetry, prose, dramatic performance, *etc*. A technique aimed at enhancing mindfulness with subsequent art therapy (Joshi et al., 2021; Kievisiene et al., 2021; Meghani et al, 2018; Tang et al., 2019) or music (most commonly music listening) (Gao et al., 2019; Kievisiene et al., 2021; Wang et al., 2018) has the potential to alleviate stress, anxiety, depression or pain and improve quality of life in cancer patients, including breast cancer patients. Methodologically, it is a variable group of therapeutic techniques in terms of methodology (type of art used), form (individual/group), duration of therapy sessions or the whole program, as well as their implementation by different therapists (art therapist, music therapist, psychologist, and other trained professionals working in the health sector) (Kievisiene et al., 2021; Wang et al., 2018). The scientific evidence for the effectiveness of this therapy in breast cancer patients is still inconclusive and requires further research validation.

Study limitations

SRMA analysed the relationships between s/r interventions and domains of bio-psycho-social and spiritual health in breast cancer patients. Given that these are relatively new interventions implemented in clinical practice, the increase in RCTs evaluating the effect of s/r interventions on patient health outcomes is a positive development. The total exact number of participants was not reported in all SRMAs, only the sample size. Sample sizes also varied. As this is a relatively new field, the number of SRMAs explicitly focused on the implementation of specific spiritual and religious interventions for breast cancer patients was limited; the largest number of SRMAs focused on evaluating the impact of mindfulness-based therapy and yoga. The length of each intervention session, the total duration of the intervention program, and follow-up after the program were varied. As these are relatively new interventions implemented in health care, the methodology or protocols of the studies are heterogeneous. As the number of studies focusing on the application of s/r interventions is limited, some RCTs may have been part of multiple SRMAs, and this may have contributed to bias in the quality of the results. The study also does not capture all potential types of s/r interventions applied in clinical practice. Other types of therapeutic approaches are also used to meet the psychological, emotional and spiritual aspects of health in patients with cancer, *e.g.*, dignity or forgiveness therapies. These interventions were not analysed in this study, given that at the time of the search no studies with the interventions in breast cancer patients were identified. Another limitation of this study was the number of databases available to search for studies in line with the aim of this study.

Conclusion

The analysed studies showed that selected spiritual/religious interventions are associated with improved psychosocial and spiritual outcomes, quality of life and well-being, as well as with improvement of selected neuroimmunological parameters in women with breast cancer, which supports the application of these interventions in clinical practice by professionally trained professionals – psychologists, nurses, physicians, priests.

The analysed studies were characterized by a certain methodological heterogeneity. Standardisation of methods of spiritual and religious interventions (*e.g.*, structure and content of interventions, duration of one intervention session, frequency of repetition of interventions, total duration of the programme, and frequency of follow-up after the end of the intervention programme) could contribute to improving the quality of scientific evidence in the future.

Healthcare spending is rising, posing a serious challenge to governments around the world. In light of this, strengthening the competencies of mental health care professionals seems appropriate, as spiritual/religious interventions contribute to reducing the burden of mental disorders and improving the personal well-being and quality of life of patients, as well as improving physical health outcomes. It is also important to stimulate public debate and new, more sophisticated research in this area to understand how to improve the personal well-being and quality of life of patients with cancer, based on evidence-based research.

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Ethical aspects and conflict of interest

The authors have no conflict of interest to declare.

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