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Review Article

Spiritual Perspectives on Pain in Advanced Breast Cancer: A Scoping Review



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ABSTRACT

Objectives: The aim of the present review was to characterize how pain and spirituality have been conceptualized, assessed, and addressed and how these concepts may be related among women with advanced breast cancer.

Design: A scoping review was conducted including publications of various methodologies.

Data Sources: Searches were conducted in PubMed, CINAHL, PsycINFO, Cochrane Library, OpenGrey, OAlster, and a large university library database (published 2006–2018).

Review/Analysis Methods: Research questions and criteria were formulated at the outset, followed by identification of publications, charting data, and collating results.

Results: Forty-two publications met the inclusion criteria. Most ($n = 33$) focused exclusively on pain, five pain and spirituality, and four exclusively spirituality. Conceptual definitions were not explicitly provided but were implied. Most assessments used the 0–10 Numeric Rating Scale (pain) and qualitative methods (spirituality). Pain management primarily focused on radiotherapy and pharmaceuticals, and two publications identified spiritual interventions. No publications directly examined the impact of spirituality on pain. Findings of qualitative studies including both concepts suggest the potential value of spirituality as a mechanism to cope with pain.

Conclusions: This review identified significant unmanaged pain in women with advanced breast cancer. Women identified dimensions of spirituality as important for coping with their disease. A gap in understanding spirituality and its potential influence on pain in this population was identified.

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Of the one in eight women diagnosed with breast cancer in the United States ([American Cancer Society \[ACS\], 2019](#)), 37% are at an advanced stage, defined as stage III (locally advanced) or IV (metastatic) ([Komen, 2018](#)). The overall 5-year relative survival rate for advanced breast cancer is estimated at 15%–22% in distant or metastatic disease ([ACS, 2019](#)), making symptom management and the alleviation of existential concerns top priorities. Women with advanced breast cancer often experience pain from both their disease and treatment, with studies reporting up to 83% of women experience this symptom ([Puetzler, Feldmann, Brascher, Gerhardt, & Benrath, 2014](#)). Pain is a distressing multidimensional experience that includes physical sensations, emotional, and cognitive

components ([Wang, Jackson, & Cai, 2016](#); [Williams & Craig, 2016](#)), yet a unidimensional assessment approach is often used. Pain can carry important psychological and existential significance because it may be perceived as a sign of disease progression or impending death in people with advanced cancer ([McPherson, Hadjistavropoulos, Lobchuk, & Kilgour, 2013](#); [Von Moos et al., 2016](#)). Interpretations of pain are influenced by the context in which it occurs, including culture, beliefs, expectations, and past experiences ([Brant, Dudley, Beck, & Miaskowski, 2016](#)), indicating that pain is much more complex than merely physical sensations. Pain can lead to various negative consequences, affect multiple dimensions of quality of life ([Paice & Ferrell, 2011](#)), and even result in cancer treatment dose delays and interruptions ([Wyatt, Sikorskii, Tesnjak, Victorson, & Srkalovic, 2015](#)).

Spirituality has not been adequately investigated in the context of pain. Spirituality is a way of being in the world in which one experiences connection with the self, others, nature, or a higher power; appreciation; and a sense of meaning ([Weathers, McCarthy,](#)

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& Coffey, 2016). Patients have often reported heightened awareness of existential concerns, such as angst about life's meaning and purpose, as the result of cancer, which, if unaddressed, can compromise spiritual well-being and increase distress (Reynolds, 2006). Spiritual distress is defined as impairment in one or more dimensions of spirituality (Hospice and Palliative Nurses Association, 2007). One study reported spiritual distress among 44% of the sample of patients with a variety of advanced cancers (Caldeira, Timmins, de Carvalho, & Vieira, 2016), indicating a need for additional work in this area. Estimates of the impact of spiritual distress on pain among women with advanced breast cancer have not yet been studied and will be important to examine because of the unique treatments (e.g., hormonal therapies) and symptom experiences (e.g., hormone related, likelihood of experiencing bone metastasis and bone pain) in this population (National Cancer Institute, 2017; Rosenfield & Stahl, 2006).

The potential role of spirituality in pain experiences is not well understood, but hypotheses have been offered relative to how these concepts may be related. In some cultural paradigms, pain is seen as a test of one's faith or strength, and bearing pain is favorably perceived (Al-Natour, Al Momani, & Qandil, 2017), which could affect the way women with breast cancer relate to their pain. In addition, a strong sense of spirituality carries the capacity to provide meaning in life, which may increase feelings of inner strength and buffer the negative influence of pain experiences (Al-Natour et al., 2017). It is known that poor psychological adjustment to pain can exacerbate the pain experience and decrease functional ability (Alves, Vieira, Mathias, & Gozzani, 2013); enhancing spirituality could potentially serve as an avenue to improve psychological adjustment to pain, therefore positively altering how this symptom is experienced (Krigel, Myers, Befort, Krebill, & Klemp, 2014). Furthermore, modifying expectations, interpretations, and judgments about pain have the capacity to affect how this symptom is experienced (Wiech et al., 2009), and spirituality has the potential to induce such changes, ultimately by targeting the emotional and cognitive dimensions of pain.

In recent years there has been growing evidence for the effects of spirituality on both mental and physical well-being (Akbari et al., 2016); however, much of the literature does not focus on advanced breast cancer. In a recent study with African-American patients reporting different stages and types of cancer pain (N = 102), higher spirituality was significantly associated with lower pain severity and lower pain interference, with the hypothesis that spirituality can serve as a protective factor against pain (Bai, Brubaker, Meghani, Bruner, & Yeager, 2018). Because African-American women often experience and relate to spirituality differently than Caucasian women (Gaston-Johansson, Haisfield-Wolfe, Reddick, Goldstein, & Lawal, 2013), additional investigation is needed to see how spirituality is expressed and how it may relate to symptoms such as pain in other populations.

Multiple studies looking at samples of patients with various types and stages of cancers have found significant relationships between pain and spirituality as well (Delgado-Guay et al., 2016; Hui et al., 2011; Wang & Lin, 2016), gathering support for the value of addressing spiritual needs as part of comprehensive symptom management. Because individuals with different types of cancer often undergo unique treatments and face unique symptom experiences, assessment and management of symptoms must be as individually tailored as possible (Deshields, Potter, Olsen, & Liu, 2014). This review is built on the promising findings of the studies mentioned and aims to begin investigating the impact of spirituality on pain in a specific population, women with advanced breast cancer. Understanding pain and spirituality in women with advanced breast cancer may provide insights on how to optimally address the complex symptom of pain and provide comprehensive

care for these women. Therefore the purpose of this scoping review was to examine how pain and spirituality have been conceptualized, assessed, and addressed in women with advanced breast cancer and to evaluate what is known about the impact of spirituality on pain in this population.

Review Methods

A scoping review is an iterative process, requiring multiple searches and creative variations to examine, summarize, synthesize, and identify gaps in the existing literature (Arksey & O'Malley, 2005). This methodology is especially useful when areas under investigation are vast and complex or when research questions are broad because scoping reviews allow for inclusion of publications of various methodologies, including theoretical and narrative reviews and qualitative and quantitative research (Peterson, Pearce, Ferguson, & Langford, 2017; Tricco et al., 2018). Such an approach is well suited to evaluating the state of the science relative to pain and spirituality, which are both broad and complex concepts on their own, and even more so when examining them together.

This scoping review was guided by the methodologic framework proposed by Arksey and O'Malley (2005) and includes five main stages: (1) identification of the research question and eligibility criteria; (2) identification of relevant publications; (3) selection of publications; (4) charting the data; and (5) collating, summarizing, and reporting the results. A modified version of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram was used to depict this work (Moher, Liberati, & Altman, 2009) (see Fig. 1). The PRISMA Extension for Scoping Reviews checklist was also used to enhance methodologic rigor and reporting of this review (Tricco et al., 2018).

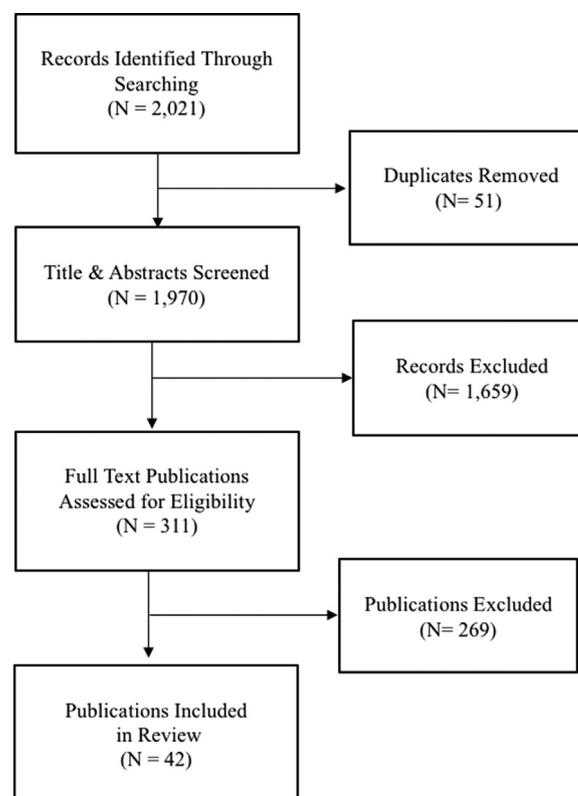


Figure 1. Modified PRISMA diagram.

Stage 1: Define Research Questions and Criteria

Research Questions

Research questions were as follows:

Among women with advanced breast cancer:

1. How is pain conceptualized, assessed, and addressed?
2. How is spirituality conceptualized, assessed, and addressed?
3. Does spirituality affect the pain experience?

Eligibility Criteria

Publication inclusion criteria were (a) adults ≥ 18 years old, (b) women with a current advanced breast cancer diagnosis (stage III or IV), (c) results reported on patient pain or spirituality, (d) published in English, and (e) published 2006–2018 (Table 1). Publications with mixed samples (e.g., early stage and advanced breast cancer or different types of advanced cancers) were included only if advanced breast cancer findings were reported independently in order to specifically capture the experiences of women with advanced breast cancer. Publications were restricted to the last 11.6 years (2006–2018) because a comprehensive review on bone pain in advanced breast cancer was published in 2006 (Rosenfield & Stahl, 2006). This review serves to update past reviews and approach pain more comprehensively to capture a broad view of the current state of the science.

Stage 2: Identifying Relevant Publications

A review was conducted in PubMed, CINAHL (Cumulative Index to Nursing and Allied Health Literature), PsycINFO, Cochrane Library, OpenGrey, OAlster, and a large university library database to curate published work and other relevant (gray) literature. Criteria were set at the outset of the study and consistent terms were applied to each search engine, along with subject headings from the U.S. National Library of Medicine's MeSH terms (Medical Subject Headings), and database-specific key words (Table 2). An iterative process was used, adding new terms and combinations as they emerged from the literature. A manual search through key journals followed the database search. Reference lists of relevant reviews and original studies were also screened for additional citations.

Stage 3: Selecting Publications

Initial searching yielded 2,021 results. When imported into Endnote reference management software, 51 duplicates were removed. After screening each record for relevance, 311 potential records were identified. The full-text articles ($n = 311$) were accessed for further evaluation against inclusion criteria, with 42 publications included in the final review (2.08% of identified citations). Screening and identifying publications were completed by the first author. Primary reasons for exclusion were early stage breast cancer population, missing stage information, lack of pain or spirituality outcome, or a focus on women who had completed treatment and no longer had signs of active disease.

Table 1
Search Criteria

Inclusion Criteria
Age: ≥ 18 years old
Participants with advanced breast cancer diagnosis (stage III or IV)
Finding related to patient pain or spirituality
Published in English
Published 2006–2018

Table 2
Search Strategy

Area	Search Terms (MeSH Terms When Available)
Population:	Breast Neoplasms, breast cancer, advanced, stage III, stage IV, stage three, stage four, metastasis*
Pain:	Pain, pain management, pain control, pain reduction
Spirituality:	Spirituality, spiritual quality of life, spiritual QOL, spiritual well-being, spiritual well-being, spiritual wellbeing, spirit, existential

QOL = quality of life.

* Truncation.

Stage 4: Charting Data

A descriptive-analytical method was used for data extraction, where standard information was obtained from each publication (Arksey & O'Malley, 2005). Information including (a) author, (b) type of publication, (c) sample, (d) purpose, (e) study design or methods, (f) pain or spirituality definition, (g) pain or spirituality assessment, (h) pain or spirituality intervention, and (i) key findings were included in an initial table, which was then reduced to include only key elements (Table 3). The quality of evidence was not appraised because this generally is not the focus of scoping reviews (Arksey & O'Malley, 2005) and the aim of this review was to broadly explore pain and spirituality. In addition, a scoping overview table was created (Table 4) along with a diagram (Fig. 2), which provide data of the focus (pain and/or spirituality) for each of the included publications.

Results

Stage 5: Collating, Summarizing, and Reporting Results

Research Question 1: How is Pain Conceptualized, Assessed, and Addressed?

Pain conceptualized and assessed. Of the 42 included publications, 38 focused on pain: 31 reports of quantitative studies, 4 reports of qualitative studies, 1 case study, 1 literature review, and 1 study protocol. Definitions of pain were not offered in any of the publications, but pain was generally conceptualized from a physiologic perspective and assessed with unidimensional measures (Table 5 for pain assessments used).

Overall, pain assessments were most often carried out with visual analog scales or numeric rating scales ($n = 14$) or versions of the Brief Pain Inventory (BPI) ($n = 9$), followed by qualitative assessments ($n = 3$). Of publications reporting the prevalence of pain in samples of women with advanced breast cancer, estimates ranged from 30% to 83% (Perroud et al., 2016; Puetzler et al., 2014). Variations in pain prevalence reports may be due to varied sample characteristics and assessment methods. For example, the sample with one of the highest pain prevalence reports (72%) also had one of the smallest and most ethnically diverse samples (Sheean, Kabir, Rao, Hoskins, & Stolley, 2015). Most studies used patient self-report (Butler et al., 2009; Perroud et al., 2016; Reed et al., 2012; Sheean et al., 2015), although one used electronic medical record audits (Stuver et al., 2012), which are entered by providers, a factor that could have influenced findings (Sikorskii et al., 2012). It is likely that assessment periods also varied (e.g., "pain now," last 24 hours, last 7 days), which were not consistently reported and could yield different prevalence estimates.

Pain is often reported in both severity and interference, which can be taken together to gain a more complete understanding of the pain experience because each of these components was found to have significant prognostic effects on survival (Smyth et al.,

Table 3
Characteristics of Included Publications

Publication	Sample	Design	Pain and/or Spirituality Assessment	Pain and/or Spirituality Intervention	Key Findings
Abernethy et al. (2010)	N = 50, mean age 51 (31-79 years)	Prospective, single-arm, phase 2 pilot study	Pain: MD Anderson Symptom Inventory (MDASI) Spirituality: FACIT—Spiritual Well-Being Scale (FACIT-Sp)	Pain & spirituality: “Pathfinder” intervention	Significant changes not found in spirituality—FACIT-Sp: Meaning/peace subscale slightly improved (nonsignificant), faith subscale did not improve. Pain assessed but outcomes not reported.
Ahmad et al. (2011)	N = 3, Malay Muslim women, mean age 41.7 (39-47 years)	Qualitative	Spirituality: in-depth interviews	Spirituality: N/A	Two main themes were revealed: “illness as an awakening” and “hope and freedom comes from surrendering to God.” Highlighted importance of understanding cancer experience within the appropriate cultural context (especially so for spirituality).
Arathuzik (2009)	N = 19, 20-80 years	Qualitative, grounded theory	Pain: 1-3 hour semistructured interviews	Pain: N/A	Living with suffering: a fluid nonlinear process, patients endure suffering and use coping strategies to deal with pain based on disease state. Three main coping strategies: struggling, surrendering, and adjusting to pain. Use depends on age, pain duration, pain intensity, and past experience with pain.
Atahan et al. (2010)	N = 100, median age 50 (27-84 years)	RCT	Pain: VAS	Pain: radiotherapy and zoledronic acid	No significant differences in pain between radiotherapy doses.
Badr and Milbury (2011)	N = 191, mean age 52.2 (23-78 years)	Longitudinal, observational, prospective	Pain: Multidimensional Pain Inventory	Pain: N/A	Patients scored significantly lower on pain severity than other published values for this population. Partner responses to pain associated with patient pain behaviors.
Barragan-Campos et al. (2014)	N = 31, mean age 55.1 (38.0-75.8 years)	Longitudinal, retrospective	Pain: VAS	Pain: Percutaneous Vertebroplasty	Reported 90.3% pain relief was achieved. Reduction preintervention to postintervention ($p < .001$).
Bell et al. (2016)	N = 165, median age 63 years	Open-label, randomized, phase II study	Pain: BPI	Pain: Oral letrozole vs. letrozole plus oral palbociclib	No significant differences in pain severity or interference between groups.
Butler et al. (2009)	N = 125, mean age 53	RCT	Pain: Pain Rating Scale	Pain: Supportive-expressive group therapy with hypnosis plus education vs. education only	At baseline, 48% reported current pain (mean = 2.2). “Pain in this moment” and “suffering in this moment” were highly correlated. Intervention group reported significantly less increase in pain intensity and suffering over time. No significant effect on frequency of pain episodes or amount of constant pain.
Carson et al. (2017)	N = 0 (study protocol, not yet completed)	Study protocol for a single-blinded, randomized, attention-controlled, trial	Pain: BPI—Short Form	Pain: Yoga, 8 weekly 120-minute sessions and home practice	Challenges include recruitment (adequate inclusion of minorities, limiting and controlling for selection bias), tailoring yoga intervention for special needs, maximizing adherence and retention. Planned to be completed in 2017.
Carson et al. (2007)	N = 13, mean age 59	Pilot study	Pain: 100-mm VAS	Pain: Yoga of Awareness Program, 8 weekly 120-minute sessions and home practice.	Nonsignificant trends toward reduced pain. Increased yoga practice significantly associated with lower levels of next-day pain.
Cleeland et al. (2013)	N = 2046, median age 56.5 years	Randomized, double-blind, phase 3 study	Pain: BPI—Short Form	Pain: Denosumab vs. zoledronic acid	Denosumab improved pain prevention and had comparable pain palliation compared with zoledronic acid. Fewer denosumab-treated patients used strong opioid analgesics.
Cooper (2011)	N = 1, age 64	Case study	Spirituality: qualitative recall of 16 patient encounters	Spirituality: Spiritual care by chaplain	The patient “found a greater measure of peace about the purpose and meaning of her life in the face of dying.” She was able to claim “her own spiritual authority to meet the challenge of living and dying,” relinquish fear of God, and

(continued on next page)

Table 3 (continued)

Publication	Sample	Design	Pain and/or Spirituality Assessment	Pain and/or Spirituality Intervention	Key Findings
Di Franco et al. (2014)	N = 193, age not reported	Longitudinal, retrospective, nonrandomized	Pain: 11-point NRS and Pain Intensity Difference	Pain: Radiotherapy, individualized	replace it with “faith that she was acceptable to the Holy One.” Mean baseline pain was 7.32, after 180 days reduced to 4.36 ($p < .001$).
Furlan, Trovo, Drigo, Capra, and Trovo (2014)	N = 13, mean age 56.4 years	Single-arm, prospective, phase I clinical trial	Pain: NRS and analgesic consumption	Pain: Radiotherapy	Average pain decreased from 4.9 to 1.0 ($p < .001$). 11 patients had pain relief in the radiated field. Six stopped analgesic drug consumption.
Iakovou et al. (2014)	N = 63, mean age 57.7 years	Prospective, nonrandomized	Pain: Modified Wisconsin Test	Pain: Radiopharmaceuticals	Pain palliation was complete (score decreased more than 2) in 52% of patients, partial (decreased 1 or 2) in 31%, and absent in 16%. All radiopharmaceuticals had same therapeutic effect.
Ismail-Hamash, Umberger, Aktas, Walsh, and Cheruvu (2018)	N = 86, mean age 61.5 (30–92 years)	Cross-sectional	Pain: Empirical symptom checklist (“present” or “absent”)	Pain: N/A	Pain symptom cluster did not have a significant mediation effect on performance. Women reporting pain were more likely to be bedridden and have psychoneurologic symptoms
Kokkonen et al. (2017),	N = 128 mean age 60 (34–84 years)	Nonrandomized, prospective, cross-sectional, observational	Pain: NRS, RAND SF-36 and European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30	Pain: N/A	Mean pain in movement (0–10) was 3.2. Mean disability caused by pain (0–10) was 4.4.
Krigel et al. (2014)	N = 15, mean age 56.8 (32–75 years)	Qualitative, focus groups, Interpretive phenomenological	Spirituality: 90-minute semistructured group interviews	Spirituality: N/A	Women spoke of existential concerns such as increased awareness of their mortality, preparing for death, handling uncertainty, and the search for meaning.
Kumar et al. (2013)	N = 147, mean age 47	RCT	Pain: Verbal pain scale (0–10)	Pain: Sudarshan kriya and pranayam, one 18-hour workshop over 3 days, 20 minutes daily at-home practice.	Pain perception reduced by 3 points in intervention group compared with control.
Kundel et al. (2013)	N = 29, median age 59 (35–84 years)	Longitudinal, nonrandomized	Pain: 0–10 scale and analgesic consumption	Pain: Radiotherapy and pharmaceutical	Response rate (complete = 0 and no increase in analgesic consumption, and partial = reduction ≥ 2 no increase in analgesic consumption) was 86%.
Lee et al. (2017)	N = 18, median age 53.5 (35–67 years)	Nonequivalent control group pre-/posttest study	Pain: Wisconsin BPI	Pain: 8-week mindfulness-based stress reduction program	Mean pain decreased from 3.44 to 3.11 in intervention group and increased from 1.78 to 3.11 in control group. No significant difference between groups in average pain ($z = -1.749$, $p \leq .080$).
Mohammed et al. (2012)	N = 1, 63 years old	Case study	Pain: VAS	Pain: Intrathecal ziconotide	VAS began at 9/10, decreased to 7/10 on day 3 and 6/10 on day 6 of treatment. Dosage increased on days 7 & 9. VAS decreased to 3–4/10 on day 10.
Mosher et al. (2013)	N = 44, mean age 57.9	Qualitative, expressive writing	Pain & spirituality: Open-ended expressive writing essays, 20 minutes each	Pain & spirituality: N/A	Researchers analyzed 176 essays. Three main themes: (1) quality-of-life concerns, including physical symptom burden, emotional distress, body image disturbance, and disrupted daily activities; (2) Social constraints on disclosure of cancer-related concerns may exacerbate distress; (3) Heightened awareness of life's brevity and search for meaning. A total of 61% of women reported pain. Most common existential issues were heightened awareness of eventual death and impact on

Niklasson, Paty, and Ryden (2017)	N = 16, mean age 56 (38-74 years)	Qualitative, semistructured interviews	Pain: focused interview and NRS	Pain: N/A	family (43%) and search for meaning in suffering (25%). All participants spontaneously reported pain (most commonly reported symptom). Mean severity was 8/10. Four key themes: uncertainty, coping, loving, and believing. Under coping, women mentioned enduring pain and adverse effects. Spirituality encompassed throughout all themes, such as believing and relying on faith and hope to help fight their breast cancer. 30% reported pain at baseline. There was significant decrease in proportion of patients reporting pain from baseline to end of treatment ($p \leq .046$).
Pacsi (2015)	N = 6, 30-45 years	Qualitative, semistructured interviews	Pain & spirituality: 90-minute interviews, (beginning with "What is your personal experience living with advanced breast cancer?")	Pain & spirituality: N/A	
Perroud et al. (2016)	N = 20, mean age 57 (38-78 years)	Secondary analysis of a longitudinal, nonrandomized, phase II clinical trial	Pain: BPI, Spanish version	Pain: Metronomic cyclophosphamide and celecoxib	A total of 83% of the patients experienced pain at baseline, of whom 35% were not prescribed any pain medication. Significant and clinically relevant improvements in pain were found after CPT.
Puetzler et al. (2014)	N = 52, mean age 65.7 (30-86 years)	Cross-sectional and prospective cohort designs	Pain: NRS	Pain: Comprehensive pharmacologic cancer pain therapy (CPT)	A total of 34% reported significant pain. Among women with bone metastases, nearly half reported significant pain.
Reed et al. (2012)	N = 235, mean age 55 (25-84 years)	Cross-sectional	Pain: Functional Assessment of Cancer Therapy—Breast QoL	Pain: N/A	A total of 72% of women reported pain.
Sheean et al. (2015)	N = 25, mean age 58.8 years	Cross-sectional	Pain: Patient-Generated Subjective Global Assessment (PG-SGA)	Pain: N/A	Belief that medical cure for pain exists buffered the positive association between pain severity and pain behaviors. After adjusting for patient characteristics, spirituality was found to have significant associations with despair ($p < .01$) and emotional well-being ($p < .05$).
Shen, Redd, Winkel, and Badr (2014)	N = 201, mean age 52.2 years	Secondary analysis of a longitudinal, retrospective, study	Pain: BPI, brief Survey of Pain Attitudes (SOPA) and 17-item Pain Behaviors Checklist	Pain: N/A	
Smith et al. (2011)	N = 44, mean age 51.5 (31-79 years)	Longitudinal, prospective, single-arm, pilot study	Spirituality: FACIT-Sp	Spirituality: Pathfinder intervention (including cognitive restructuring, mind/body technique instruction, self-care, and end-of-life planning)	
Smyth et al. (2016)	N = 529, median age 54.5 years	Post hoc analysis of a phase III clinical trial	Pain: BPI—Short Form	Pain: Gemcitabine plus paclitaxel or paclitaxel alone	Worst pain and pain interference had significant prognostic effect for survival (both hazard ratios 1.07 for 1-point increase; $p \leq .0061$). Median survival for patients by BPI-SF worst pain score = 0 was 23.8, worst pain score = 1-4 was 17.9, and worst pain score = 5-10 was 14.6 (log-rank $p = .0065$).
Stuver et al. (2012)	N = 611, subset of the entire sample of various cancers (mean age 61.2 years)	Retrospective, cross-sectional	Pain: Intensity on 0-10 NRS and/or VAS, obtained from medical record	Pain: N/A	A total of 69.6% of breast cancer patients reported no pain; 12.6% reported "low" (1-3), 10.5% reported moderate (4-6) and 7.4% reported severe (7-10). Younger age, minority race, and recent onset of advanced disease were associated with severe pain.
Thornton, Andersen, and Blakely (2010)	N = 104, mean age 53 years	Cross-sectional	Pain: 7-item Pain Interference scale from BPI	Pain: N/A	Mean pain was 14.25. Evidence for stress hormones as a common mechanism for the co-occurrence of pain, depression, and fatigue.
Twelves et al. (2017)	N = 733, mean age 55 (28-84 years)	Post hoc analysis of an open-label, longitudinal, randomized, trial	Pain: EORTC QLQ-C30	Pain: Etipirnotecan pegol (NKTR-102) or single-agent treatment of physician's choice (from commonly used cytotoxics)	On a 0-100 transformed scale, mean in etipirnotecan pegol group was 32.3; mean in treatment of physician's choice group was 35.3.
Westhoff et al. (2015)	N = 434, age not reported	Longitudinal, prospective	Pain: 11-point NRS	Pain: Radiation therapy	Of breast cancer patients, 355 (82%) responded to radiation therapy (decrease in pain score by ≥ 2 points without analgesic increase, or

(continued on next page)

Table 3 (continued)

Publication	Sample	Design	Pain and/or Spirituality Assessment	Pain and/or Spirituality Intervention	Key Findings
Willis et al. (2015)	Review, N = 33 publications reviewed (1984-2013)	Review of the literature, qualitative and quantitative	Pain & spirituality: varied, review article	Pain & spirituality: N/A	analgesic decrease without increase in pain); 79 (18%) did not. Pain: Many studies indicated the significant problem of pain. Experiencing pain was a trigger for fear for some women who perceived that this symptom as a sign of disease progression. Spirituality: Living with metastatic disease found to provide an opportunity for personal and spiritual growth. Women described spirituality as a source of strength, peace, and healing that helped them cope with feelings of uncertainty, loss, and fear and to accept their diagnosis.
Wyatt et al. (2012)	N = 385, mean age 56 years	Longitudinal RCT	Pain: BPI–Short Form	Pain: Reflexology vs. lay foot manipulation vs. conventional care	Baseline pain for reflexology group = 3.76, lay foot manipulation = 3.87, conventional care = 3.95. In contrast to other reflexology studies, significant effects not found for pain. Women with distant metastasis had lower functioning and more pain; no differences in spirituality.
Wyatt et al. (2013)	N = 385, mean age 56 years	Secondary analysis of a longitudinal RCT	Pain: BPI–Short Form Spirituality: Long-Term Quality of Life Instrument (LTQL) spirituality subscale Pain: BPI–Short Form	Pain & spirituality: Secondary analysis of reflexology vs. lay foot manipulation vs. conventional care study Pain: Secondary analysis of reflexology vs. lay foot manipulation vs. conventional care study	Summed pain severity significantly associated with dose delays or dose reductions. Direction of associations dependent on women having metastatic disease.
Wyatt et al. (2015)	N = 385, mean age 56 years	Secondary analysis of a longitudinal RCT	Pain: BPI–Short Form	Pain: Zoledronic acid	Painful site subscale significantly reduced during first 12 months, with the exception of 6-month follow-up. Pain characteristics significantly lower from 2 months onward. VAS scores indicated significant reduction in pain.
Yeh et al. (2014)	N = 366, mean age 53.7 years	Single-arm, noncomparative, open label, longitudinal, observational phase IV study	Pain: European Organization for Research and Treatment of Cancer bone metastases module (EORTC QLQ-BM22) and VAS Pain: VAS	Pain: Percutaneous vertebroplasty combined with zoledronic acid	Pain decreased significantly from 7.6 at 24 hours before intervention to 3.6 at 24 hours after, 2.0 at 1 month, 2.8 at 3 months, 3.1 at 6 months, and 2.5 at 12 months after intervention ($p < .05$).
Zhang et al. (2013)	N = 43, mean age 57.3 (32-74 years)	Longitudinal, non-randomized	Pain: VAS	Pain: Percutaneous vertebroplasty combined with zoledronic acid	Pain decreased significantly from 7.6 at 24 hours before intervention to 3.6 at 24 hours after, 2.0 at 1 month, 2.8 at 3 months, 3.1 at 6 months, and 2.5 at 12 months after intervention ($p < .05$).

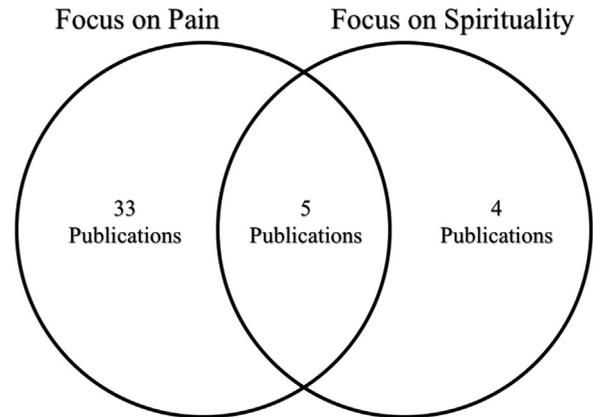
N/A = not applicable; RCT = randomized controlled trial; VAS = visual analog scale; BPI = Brief Pain Inventory; NRS = Numeric Rating Scale for Pain; QoL = quality of life; SF = 36 = 36-Item Short Form Health Survey.

Table 4
Scoping Overview

Publication	Pain	Spirituality
Abernethy et al., 2010	✓	✓
Ahmad et al., 2011		✓
Arathuzik, 2009	✓	
Atahan et al., 2010	✓	
Badr & Milbury (2011)	✓	
Barragan-Campos et al., 2014	✓	
Bell et al., 2016	✓	
Butler et al., 2009	✓	
Carson et al., 2017	✓	
Carson et al., 2007	✓	
Cleeland et al., 2013	✓	
Cooper, 2011		✓
Di Franco et al., 2014	✓	
Furlan et al., 2014	✓	
Iakovou et al., 2014	✓	
Ismail-Hamash et al., 2018	✓	
Kokkonen et al., 2017	✓	
Krigel et al., 2014		✓
Kumar et al., 2013	✓	
Kundel et al., 2013	✓	
Lee et al., 2017	✓	
Mohammed et al., 2012	✓	
Mosher et al., 2013	✓	✓
Niklasson et al., 2017	✓	
Pacsi, 2015	✓	✓
Perroud et al., 2016	✓	
Puetzler et al., 2014	✓	
Reed et al., 2012	✓	
Sheean et al., 2015	✓	
Shen et al., 2014	✓	
Smith et al., 2011		✓
Smyth et al., 2016	✓	
Stuver et al., 2012	✓	
Thornton et al., 2010	✓	
Twelves et al., 2017	✓	
Westhoff et al., 2015	✓	
Willis et al., 2015	✓	✓
Wyatt et al., 2012	✓	
Wyatt et al., 2013	✓	✓
Wyatt et al., 2015	✓	
Yeh et al., 2014	✓	
Zhang et al., 2013	✓	

2016). Severity was most often assessed in this sample of publications; interference was not consistently assessed. For those publications reporting severity, baseline estimates ranged from 1.78 out of 10 (Lee, Kim, Kim, Joo, & Lee, 2017) to 9 out of 10 (Mohammed, Brookes, & Eldabe, 2012), with variations likely a result of differing sample characteristics. Although interference was not consistently reported, one publication did report “mean disability caused by pain” as a 4.4 out of 10 (Kokkonen et al., 2017).

Interventions: Pain. A total of 25 interventions for pain in this population were identified. Of these, pain management was primarily implemented with the use of varied pharmaceuticals ($n = 11$) and radiotherapy ($n = 5$). Reports of other interventions included percutaneous vertebroplasty (Barragan-Campos et al., 2014), a combination of percutaneous vertebroplasty and pharmaceutical management (Atahan et al., 2010; Zhang et al., 2013), a “Pathfinder” intervention (including cognitive restructuring, mind/body techniques, self-care, and end-of-life planning) (Abernethy et al., 2010), supportive-expressive group therapy (Butler et al., 2009), yoga (Carson, Carson, Olsen, Sanders, & Porter, 2017; Carson et al., 2007), sudarshan kriya and pranayam (Kumar et al., 2013), mindfulness-based stress reduction (Lee et al., 2017), and reflexology (Wyatt, Sikorskii, Rahbar, Victorson, & You, 2012). Each intervention was tested in varying samples with differing levels of success. Various complementary and integrative therapy

**Figure 2.** Overview diagram.

interventions were identified for pain management in this population ($n = 7$), yet the majority of intervention studies focused on radiotherapy or pharmaceutical management.

Research Question 2: How is Spirituality Conceptualized, Assessed, and Addressed?

Spirituality conceptualized and assessed. Nine publications were identified that focused on spirituality in women with advanced breast cancer. Findings included reports of four qualitative studies, three quantitative studies, one case study, and one literature review. Definitions of spirituality were not offered in any of the publications, but spirituality was generally conceptualized as encompassing faith, meaning, and existential concerns. In multiple qualitative studies, women cited these dimensions of spirituality (primarily a search for meaning in life) as key aspects of their illness experiences. In a literature review of quantitative and qualitative work focused on women’s experiences of metastatic breast cancer, researchers found spirituality was described as “a source of strength, peace, and healing” able to help women cope with feelings of uncertainty, loss, and fear to become more accepting of their diagnosis and to shift the focus of their lives (Willis, Lewis, Ng, & Wilson, 2015).

Spirituality assessments were primarily qualitative (Ahmad, Muhammad, & Abdullah, 2011; Krigel et al., 2014; Mosher et al., 2013; Pacsi, 2015) along with two quantitative studies using the Functional Assessment of Chronic Illness—Spiritual Well-Being Scale (Abernethy et al., 2010; Smith et al., 2011) and one using the Long Term Quality of Life Philosophical/Spiritual subscale (Wyatt, Sikorskii, Tamkus, & You, 2013). See Table 6 for an overview of spirituality assessments used.

Interventions: Spirituality. Only two studies that provided a spiritual intervention for women with advanced breast cancer were identified. One was the “Pathfinders” intervention, which consisted of cognitive restructuring, mind/body technique instruction, self-care, and end-of-life planning. Although the intervention was successful in other areas, no significant changes were found in spiritual well-being (Abernethy et al., 2010). The second intervention was reported in a case study of pastoral care, consisting of 16 unstructured encounters, and positive outcomes, such as an increased sense of peace, acceptance, and purpose, were qualitatively reported by the involved patient (Cooper, 2011).

Research Question 3: Does spirituality Affect the Pain Experience?

Interconnectedness of pain and spirituality. Five publications reported findings related to both pain and spirituality. These include

Table 5
Pain Assessments

Pain Assessment	Publications Using Assessment	Total
Analgesic consumption	Furlan et al., 2014 Kundel et al., 2013	2
Brief Pain Inventory (BPI) or BPI–Short Form	Bell et al., 2016 Carson et al., 2017 Cleeland et al., 2013 Lee et al., 2017 Perroud et al., 2016 Shen et al., 2014 Smyth et al., 2016 Wyatt et al., 2012 Wyatt et al., 2015	9
BPI—Interference Scale	Thornton et al., 2010	1
Brief Survey of Pain Attitudes (SOPA)	Shen et al., 2014	1
European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30	Kokkonen et al., 2017 Twelves et al., 2017	2
Empirical symptom checklist (“present” or “absent”)	Ismail-Hamash et al., 2018	1
EORTC Bone Metastases (EORTC QLQ-BM22)	Yeh et al., 2014	1
Functional Assessment of Cancer Therapy–Breast (FACT-B)	Reed et al., 2012	1
MD Anderson Symptom Inventory (MDASI)	Abernethy et al., 2010	1
Modified Wisconsin Test	Iakovou et al., 2014	1
Multidimensional Pain Inventory (MPI)—Severity Subscale	Badr & Milbury (2011)	1
Numeric Rating Scale for Pain (NRS) and/or visual analog scale (VAS)	Atahan et al., 2010 Barragan-Campos et al., 2014 Carson et al., 2007 Di Franco et al., 2014 Furlan et al., 2014 Kokkonen et al., 2017 Kumar et al., 2013 Kundel et al., 2013 Puetzler et al., 2014 Stuver et al., 2012 Westhoff et al., 2015 Yeh et al., 2014 Zhang et al., 2013 Niklasson et al., 2017	14
Pain Behaviors Checklist	Shen et al., 2014	1
Pain Rating Scale	Butler et al., 2009	1
Patient-Generated Subjective Global Assessment (PG-SGA)	Sheean et al., 2015	1
Qualitative—interviews, expressive writing	Arathuzik, 2009 Mosher et al., 2013 Pacsi, 2015 Niklasson et al., 2017	4
RAND 36-Item Short Form Survey (SF-36)	Kokkonen et al., 2017	1
Varied, case study	Mohammed et al., 2012	1
Varied, review	Willis et al., 2015	1

reports of two quantitative studies, two qualitative studies, and one literature review. Of these publications, none specifically looked at the impact of spirituality on pain. One quantitative study assessed pain and spirituality as separate outcomes and examined how each of these variables were affected by an intervention (Abernethy et al., 2010). The second quantitative study examined differences in pain and spirituality in women with and without distant metastases and found that women with distant metastasis had lower

functioning and more pain than those without, but no differences in spirituality were identified (Wyatt et al., 2013).

Findings from the qualitative studies revealed that women with advanced breast cancer cited both pain and spirituality as key aspects of their illness experiences (Mosher et al., 2013; Pacsi, 2015). Women reported experiencing fears of a worsening prognosis or impending death, as well as existential questions such as “why me?” when they experienced pain and suffering (Mosher et al.,

Table 6
Spirituality Assessments

Spirituality Assessment	Publications Using Assessment	Total
Functional Assessment of Chronic Illness—Spiritual Well-Being Scale (FACIT-Sp)	Abernethy et al., 2010 Smith et al., 2011	2
Long-Term Quality of Life Instrument (LTQL) spirituality subscale	Wyatt et al., 2013	1
Qualitative—interviews, focus groups, expressive writing	Ahmad et al., 2011 Krigel et al., 2014 Mosher et al., 2013 Pacsi, 2015	4
Varied, review	Willis et al., 2015	1
Varied, case study	Cooper, 2011	1

2013). Additionally, data from qualitative studies indicated that women with advanced breast cancer cited connection with a higher power and finding meaning in their experience as key mechanisms for facing their advanced breast cancer (Krigel et al., 2014; Mosher et al., 2013; Pacsi, 2015). Although these qualitative findings suggest the potential impact of spirituality on pain, no work was identified that explicitly examined this relationship among women with advanced breast cancer.

Discussion

It was clear from this review that women with advanced breast cancer experience significant pain and that various interventions are being tested and implemented to manage pain, primarily radiotherapy and pharmaceutical management. Prevalence of the BPI as the second most commonly used pain assessment indicates that some current research is trending toward a multidimensional conceptualization of pain, which is useful for the scientific advancement of pain research. The BPI assesses both pain intensity and interference, an important feature because preliminary evidence suggests spirituality may affect pain interference most (McCabe, Murray, Austin, & Siddall, 2018).

Although a solely physiologic approach to pain was often used, the literature included in this review suggests a need for a comprehensive approach that may incorporate spirituality. Including assessments of spirituality along with queries on perceived impact on pain could provide important information about how women are coping with the existential aspects of pain derived from their advanced breast cancer experience. Although both pain and spirituality were assessed within multiple studies, investigators did not report findings specifically related to the impact of spirituality on pain. In addition, qualitative studies included in this review revealed that women with advanced breast cancer cited dimensions of spirituality, such as connection with a higher power and finding meaning in their experience, as key coping mechanisms (Krigel et al., 2014; Mosher et al., 2013; Pacsi, 2015) that could also be applied to how they cope with and experience their pain.

There was a surprising lack of research on spirituality in this population considering the median survival for these women is approximately 24 months (Twelves et al., 2017), bringing existential concerns to the forefront. Overall, findings related to spirituality were sparse, but preliminary evidence from the included qualitative studies, along with quantitative studies in other advanced cancers, supports further exploration into how spirituality affects the way women relate to their disease experience, specifically to their pain. Future work may be able to explore the use of spirituality-enhancing interventions, such as meditative practices (Mackenzie, Carlson, Munoz, & Speca, 2007), meaning-centered psychotherapy (Breitbart et al., 2012), or music therapy (Cook & Silverman, 2013), as components of comprehensive pain management. Based on previous studies that have identified a relationship between pain and spirituality in mixed cancer populations, future researchers would be well served to carry these findings into specific types and stages of cancer to provide more individualized assessment and management.

Limitations

Although the flexible and comprehensive approach of a scoping review is able to capture a broad range of literature, this review still has limitations. First, publications that reported outcomes for different stages of breast cancer together (i.e., stages I–III or I–IV) or various types of cancer were excluded. Because of this reporting approach in various publications, relevant data may

have been embedded in reports and missed. Information on the differences in pain and spirituality in various subpopulations (e.g., based on age, race/ethnicity, or marital status) was generally not available. Because of this and the nature of the scoping review, findings may not be applicable to all populations. Additionally, although gray literature was screened through multiple databases, because of the vast and varied nature of this content, some may have been missed.

Implications for Nursing

Despite pain being assessed as the fifth vital sign, advancements in pain management are not fully reaching women with advanced breast cancer, which can have many negative consequences (Al-Natour et al., 2017; Paice & Ferrell, 2011). In clinical practice, achieving optimal quality of life, which is a primary goal for women with advanced breast cancer, requires comprehensive assessment and management of pain, which may include addressing spirituality. Spirituality has been found to be a source of strength and coping in patients with advanced breast cancer, so clinicians can support women in activities, such as exploring existential concerns and making meaning of their experiences, and supporting spiritual practices, such as prayer or meditation. Spiritual needs can differ based on prognosis, phase of care, cultural, and personal preferences, so the context of care must always be considered.

With the advent of new targeted therapies and new supportive medications, there is likely to be a growing population of women living with advanced breast cancer (Krigel et al., 2014). Additional research is needed to explore the complex dimensions of pain and whether spiritual support can play a role in pain management for these women. Further research could also benefit from examining differences in pain and spirituality in subpopulations of women with advanced breast cancer, such as in different age groups, races or ethnicities, or religious preferences. This work would provide important information about how women with variant demographic characteristics may experience pain and spirituality differently and provide direction toward individualizing care.

Conclusions

This review aimed to provide a broad overview of pain, spirituality, and the potential impact of spirituality on pain in women with advanced breast cancer. Findings on how each of these complex concepts are being conceptualized and assessed was provided, along with a review of interventions aimed at reducing pain and enhancing spirituality. It is widely recognized that women with advanced breast cancer experience pain, which can have many negative effects, and this review underscores the prevalence in this population. There is strong evidence that, despite current approaches to pain management, a proportion of women with advanced breast cancer still have poorly controlled pain. Although radiotherapy and pharmaceuticals are indispensable tools for pain management, the complexity of pain, especially in advanced disease, calls for the integration of broader approaches. Women with advanced breast cancer cited dimensions of spirituality as key aspects of their disease experience; therefore, invoking spirituality may serve as an avenue for enhancing individualized coping with pain and aiding in pain management. Future research aimed at understanding the complex dimensions of the pain experience, including spirituality, in this population is warranted.

This scoping review has examined the literature for two critical concepts for women with advanced breast cancer: pain and spirituality. Although pain has been well studied, it is most commonly approached with a unidimensional conceptualization. Very few

studies were found to focus on spirituality, and none were found that explored the impact of spirituality on pain in women with advanced breast cancer. Although existing work suggests a link between pain and spirituality for various cancer populations and those who are near end of life, advanced breast cancer is an area ripe for in-depth investigation.

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