

## Review

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Volume 1 : Issue 1

Article Ref. #: 1000PMHCOJ1103

### Article History

Received: August 31<sup>st</sup>, 2014

Accepted: November 14<sup>th</sup>, 2014

Published: November 17<sup>th</sup>, 2014

### Citation

Hunsberger JB, Cheng MJ, Aslakson RA. Spirituality and religiosity during the peri-operative period for cancer patients and their family: An Integrative systematic review. *Palliat Med Hosp Care Open J*. 2014; 1(1): 8-15. doi: [10.17140/PMHCOJ-1-103](https://doi.org/10.17140/PMHCOJ-1-103)

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# Spirituality and Religiosity During the Peri-Operative Period for Cancer Patients and their Family: An Integrative Systematic Review

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## ABSTRACT

**Background:** Religion and Spirituality (R/S) may influence cancer patient's emotional distress, mental health and healing throughout their diagnosis and treatment.

**Objective:** This systematic review examines studies exploring R/S of cancer patients and their family in the perioperative period.

**Design:** We completed a systematic review of the databases MEDLINE, EMBASE, CINAHL, SCOPUS, the Web of Science, and Cochrane library concerning the terms "religion and spirituality" and "cancer surgery". Inclusion criteria included qualitative or quantitative studies evaluating R/S of cancer patients or their family members within the perioperative period (one month pre- and post-surgery). Exclusion criteria included review articles, grey literature, editorials, case studies and studies evaluating R/S of healthcare providers.

**Results:** Seven publications met criteria for analysis. Five studies described cross-sectional surveys, one used a focus-group approach, and one utilized in-person interviews. Studied populations predominantly were female breast cancer patients. There were considerable heterogeneity in survey instruments, variables, and outcomes. Based on these studies:

- 1) Faith and religious beliefs were used as coping mechanisms during the perioperative period;
- 2) Evangelical Christians tended to differ in religious coping compared to Catholics;
- 3) R/S correlated with coping styles and distress;
- 4) There was increased religious coping and religious involvement during the perioperative period;

**Conclusions:** Studies evaluating R/S of cancer patients and their families in the perioperative period are few and heterogeneous in design. Direct comparison is difficult, but data suggests that R/S during the perioperative period may increase as compared to R/S during other stages of cancer diagnosis and treatment.

**KEYWORDS:** Religion; Spirituality; Religiosity; Cancer; Tumor; Surgery; Perioperative.

**ABBREVIATIONS:** R/S: Religion and Spirituality; HADS: Hospital Anxiety Depression Scale; NORA: Non-Organized Religious Activity; MOS-SSS: Medical Outcomes Study Social Support Survey; PSS: Perceived Stress Scale; IES: Impact of Event Scale; BSI-18: Brief Symptom Inventory-18; RCOPE: Religious COPE; FACT-B: Functional Assessment of Cancer Treatment-Breast; MADRS: Montgomery-Asberg Depression Rating Scale; DRI: Duke Religious.

Index; HADS: Hospital Anxiety Depression Scale.

## INTRODUCTION

Many people use religion for comfort and support when faced with a life-threatening illness such as cancer.<sup>1,2</sup> Patients who had previously disregarded religion and spirituality may search it out when faced with illness.<sup>1,3</sup> Carver found that all forms of coping, including religious coping, peaked early around the time of surgery for breast cancer patients and then declined over time.<sup>4</sup> Emerging literature also describes the positive benefits of Religion and Spirituality (R/S) in helping patients cope with distress, pain and anxiety.<sup>2,5</sup> For cancer patients, R/S has been associated with positive attributes, specifically with enhanced well-being, decreased depression and anxiety, increased meaning and feelings of hope, increased optimism and inner peace and preventing end of life despair.<sup>2</sup> However, Cohen described a positive correlation between R/S coping and increased pain reporting and post-operative analgesic use amongst women undergoing major abdominal surgery. Though this study was not specific to oncologic patients, it does suggest that increased R/S may not necessarily relate to what medical providers consider “improved outcomes”.<sup>6</sup>

Religion and spirituality have traditionally been combined in the literature; however they are two separate concepts.<sup>7</sup> Religion refers to an organized system of faith beliefs within the context of structured practices and ways of worship (e.g. Catholicism, Islam, Judaism) and codified beliefs.<sup>8,7</sup> Religion is a social institution, often culturally based and a way to express spirituality.<sup>7</sup> The concept of spirituality is broader than the concept of religion and refers to a personal connection with something that provides meaning to one’s life.<sup>8,9</sup> Spirituality does not require specific rituals, practices or even a belief in God but encompasses the transcendent and non-worldly quality of relating to other persons, a God-being or material nature.<sup>8</sup> Spirituality does not have the boundaries of the religious institution but instead is a dynamic concept that refers to the ongoing search to discover meaning.<sup>9</sup> However, for this systematic review, religion and spirituality are combined as a single concept because this is how it is presented in the literature and we are unable to separate the two concepts from the available data.

Many studies examine R/S but only do so several months after initial diagnosis and/or after months of treatment, when coping and adjustment mechanism are already in place. Yet, for many cancers, a first and major treatment option is surgery and this may be a time when R/S needs are high. The perioperative physicians, including anesthesiologists, surgeons and hospitalists, care for patients during this stressful time period, yet have very little guidance on how to manage the patient’s heightened stress of the day of surgery and the time period immediately adjacent to it. As an example of a type of cancer surgery for which there is which there is a major perioperative adjustment for both the patient and family member, Grandstaff outlines four crucial periods of adjustment to mastectomy: 1) the days surrounding surgery as the patient has fear and apprehension about

the surgery, 2) immediately after the surgery when the patient realizes the post-operative physical changes, 3) 2-3 weeks after surgery when the patient’s partner responds to the surgical incision and 4) 4 weeks post operatively when the patient and partner resolve issues of intimacy and acceptance of physical changes from mastectomy.<sup>10</sup>

As Grandstaff notes, there is an exaggeration of stress immediately prior to surgery, due to apprehension about the surgery, and then for the next several weeks after surgery, but within one month of surgical treatment. This is the time period that the perioperative physician provides care. In order to summarize the studies exploring cancer patient’s perioperative R/S experience and needs, we completed this systematic review, with the intention of laying the ground work for future studies that will guide development of interventions for perioperative spiritual support.

## MATERIALS AND METHODS

### Data Sources and Searches

This systematic review includes published studies using interview, survey or questionnaire studies that examined the spiritual or religious experiences of patients during the perioperative period. We searched MEDLINE, EMBASE, CINAHL, SCOPUS, the Web of Science, and Cochrane library as of July 27, 2012. A Johns Hopkins Medical Institution Clinical Information’s assisted in defining the search terms and strategy. The terms used to define each concept included a combination of controlled vocabulary and key word terms and phrases such as “religion” or “religion and medicine” “spirituality” and “surgery” or “resection” or “carcinoma” or “tumor” or “cancer.”

### Study Selection

Inclusion criteria included studies: exploring religious or spiritual experiences, in the English-language, and which involved adults (greater than 18 years of age) with cancer or a potential diagnosis of cancer and which were conducted during the perioperative period. The perioperative period was defined as one month prior to or after surgery. We excluded review articles, studies that did not have data reported and unpublished grey literature. Dual, independent investigators completed title/abstract and then full article screens. Disagreements about article inclusion and exclusion were resolved through discussion between the reviewers.

### Data Extraction and Analysis

Formal abstraction sheets were used to extract information from included articles. Abstracted data included study population demographics, type of study, perioperative timing and outcome. For analysis, the data was divided between pre-surgery and post-surgery outcomes. We characterized outcomes

based on their relevance to religion or spirituality, including support from church or church groups, comparison between religious groups, religious coping and religious practices. Emotional coping and support was also abstracted and analyzed. If applicable, comparison between family member and patient coping was made. Data abstraction and analysis was completed concurrently by two independent reviewers and any discrepancy between reviewers was clarified through discussion.

**RESULTS**

The search strategy returned 1499 articles and de-duplication yielded 972 articles for title/abstract screen. Of this, 53 studies were included for full article review which yielded a final seven articles (see Figure 1).<sup>1-3,5,11-13</sup>

Of the seven included studies, six enrolled women with breast cancer and one study enrolled men with urologic cancers, primarily prostate cancer. The study populations were ethnically and geographically diverse with one study conducted in Turkey, one in South Korea, one in Canada, one in the United Kingdom. Of the three studies conducted in the United States, one study specifically focused on Hispanic women while the other two studies did not have an ethnic focus. Sample sizes were small and ranged from 20 to 284. One study about breast cancer patients also included the patient’s spouses.

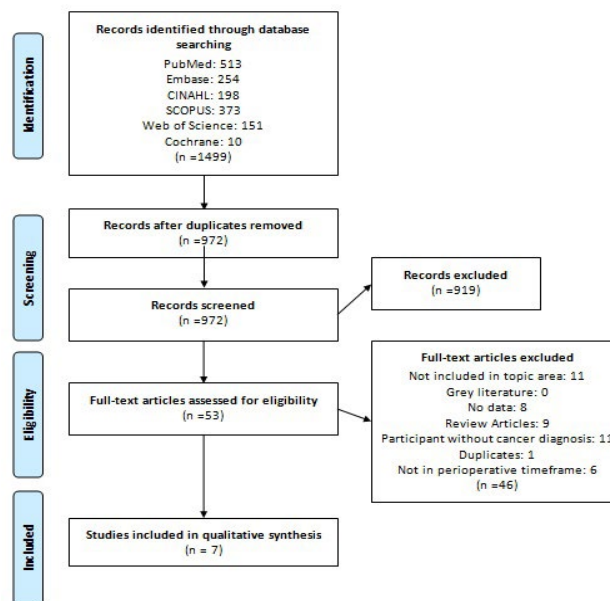


Figure 1: Flow diagram showing inclusion and exclusion of articles

Six of the studies were prospective while one included a retrospective section requiring patients to recall information about them one year prior to the study.<sup>11</sup> All studies except for two used a questionnaire or survey for assessing outcomes. Sixteen different outcome measures were used (see Table 1 and Table 2), such as: religiosity/spirituality, patient stress coping,

Publication	Study Population	Faith Tradition	Type of Study	Perioperative timing	Outcome measures
Alferi SM et al, J Health Psychol 1999 <sup>1</sup>	N=49 Hispanic women (FL) lower socio-economic status Average age= 56.37 yrs Early stage (stage 0/II) breast CA 47% married, 12% separated, 18% divorced, 16% widowed	72.5 % Catholic Evangelical group: Jehovah's Witness, Evangelist, Pentecostal, Baptist, non-denominational	Prospective study, single arm, single center	Initial interview, post-surgery interview 7-10 days after surgery, follow-up interview 3,6, and 12 months after surgery	<ul style="list-style-type: none"> <li>Religious involvement</li> <li>COPE</li> <li>POMS</li> </ul>
Biegler K et al, Integr Cancer Ther 2011 <sup>2</sup>	N=115 men (TX); Average age= 58.3 yrs 89% prostate cancer, 10% renal cancer, 1% bladder cancer, 71% some college education, 75% Caucasian, 90% Married or living with partner	93% Christian (Catholic or Protestant)	One time, cross sectional survey	Pre-op visit, about 7 days prior (range 1-29 days)	<ul style="list-style-type: none"> <li>Intrinsic religiosity</li> <li>ORA, NORA</li> <li>Brief COPE</li> <li>MOS-SSS</li> <li>Distress: PSS, IES, BSI-18, POMS</li> </ul>
Demir F et al. J Clin Nurs 2006 <sup>3</sup>	N=20, women (Turkey) with excisional breast biopsy, returned one week later for monitoring.	Not noted	Phenomenological approach	1 week post-op office follow-up visit. One hour interview.	Patients were invited to talk about their experiences. Allowing patients' own practical worlds and concerns to be revealed.
Gall TL et al, Psycho-Oncology 2009 <sup>5</sup>	N=93 breast cancer N=160 benign diagnosis, women (Canada) Average Age=60.9/52.7 yrs, 96.8/93.8% Euro-Canadian 66.7/70.6% Married or Common law, 14/6.2% Single, divorced	44.1/42.7% Catholic 36.6/42.0% Protestant 11.8/11.5% No religion	Prospective study, single arm, single center	Pre-diagnosis, 1 week pre-surgery, and 1 month, 6 mo, 1 yr, and 2 yrs post-surgery	<ul style="list-style-type: none"> <li>Religious involvement (pre-diagnosis)</li> <li>Modified RCOPE 10 subscales</li> <li>POMS</li> <li>FACT-B: only emotional well-being</li> </ul>
Jang, Ji-Eun et al, Psycho-Oncology 2012 <sup>5</sup>	N=284; women, breast cancer patients pre surgery (South Korea) Mean Age= 49.8 yrs, mean years education: 11.0	35.2% Protestant 26.4% No religion 22.2% Buddhists 16.2% Catholics	Prospective Study, questionnaire and interview	Baseline (within 5 days of surgery) and 1 year post-surgery	<ul style="list-style-type: none"> <li>DRI</li> <li>MADRS</li> <li>HADS</li> <li>EORTC QLQ-C30</li> </ul>
Northouse, L. L., Cancer Nurs 1989 <sup>12</sup>	N= 50; Women, post mastectomy and husbands (Southwestern Michigan) Mean age: 50.4 yrs patients, 52.3 yrs husbands Ave yrs education= 13-14	None noted	Prospective, qualitative study, two phase, multiple centers.	Baseline (1 to 6 days post surgery) and 30 days post surgery. Interviews conducted separately with patient and husband	Structured interview developed by investigator. Patients described greatest concerns about illness and reaction to seeing the mastectomy site; identified most stressful phase of illness and factors that helped them to cope
Thune-Boyle, I.C.V. et al, J Relig Health 2011 <sup>11</sup>	N= 202 Newly diagnosed breast cancer, women (UK) N=110 healthy, matched, control subjects. 81/84% Caucasian, 44/49% Married, 15/16% Single, Mean yrs education: 14.4/14	42/44% Protestant 23/22% Catholic 18/27% No religion 8/1% Jewish	Retrospective, between-subject design and within subject design	Post surgery (average=3 days) Retrospectively compared newly diagnosed patient's current religious/spiritual beliefs with beliefs in year prior	<ul style="list-style-type: none"> <li>Single item questions to evaluate R/S beliefs</li> <li>ORA and NORA</li> </ul>

Coping Responses (COPE, Brief-COPE), Profile of Mood States (POMS), Organized religious activity (ORA); Nonorganized religious activity (NORA), Medical Outcomes Study Social Support Survey (MOS-SSS), Perceived Stress Scale (PSS), Impact of Event Scale (IES), Brief Symptom Inventory-18 (BSI-18), Religious COPE (RCOPE), Functional Assessment of Cancer Treatment-Breast (FACT-B), Montgomery-Asberg Depression Rating Scale (MADRS), Duke Religious Index (DRI), Hospital Anxiety Depression Scale (HADS), European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30)

Table 1: Summary of studies included in the review

Outcome instruments Studies	Description
Religious Involvement Alferi <sup>7</sup>	<ul style="list-style-type: none"> <li>Items from General Social Survey</li> <li>Importance of religion, frequency of church attendance, frequency of prayer, extent to which she turned to religion for comfort, extent to which she considers herself spiritual</li> <li>Frequency of doubts about faith, and degree to which religious beliefs influenced treatment decisions</li> </ul>
Coping Responses (COPE, Brief-COPE) Alferi, Biegler <sup>1,2</sup>	<ul style="list-style-type: none"> <li>Alferi used religious coping portion of COPE: Religious coping (Emotional support from the people in my church; going to church or prayer meetings; talking with my priest or minister; trying to find comfort in my religion or spiritual beliefs); Behavioral disengagement (I've been giving up trying to deal with it); Denial (I've been saying to myself 'this isn't real')</li> <li>Biegler separated coping responses into two categories: Engagement coping: active coping, planning, acceptance, and positive reframing; Avoidant coping: denial and behavioral disengagement</li> </ul>
Profile of Mood States(POMS, POMS-SF) Alferi, Biegler, Gall <sup>1,2,3</sup>	<ul style="list-style-type: none"> <li>Check list of mood-descriptive adjectives</li> <li>Participants indicate the degree to which they have experienced the emotion in the past week</li> <li>6 subscales: tension-anxiety, depression-dejection, anger-hostility, vigor, fatigue, and confusion-bewilderment</li> </ul>
Intrinsic religiosity (IR) Biegler <sup>2</sup>	<ul style="list-style-type: none"> <li>Statements about religious beliefs or experience</li> </ul>
Multidimensional measurement of religious/spirituality (ORA, NORA)Biegler, Thune-Boyle <sup>2,11</sup>	<ul style="list-style-type: none"> <li>Organized religious activity (ORA): 2 item subscale</li> <li>Nonorganized religious activity (NORA): 3 item subscale</li> </ul>
Perceived Stress Scale(PSS) Biegler <sup>2</sup>	<ul style="list-style-type: none"> <li>14 items measuring perceptions of ongoing stress</li> </ul>
Impact of Event Scale (IES) Biegler <sup>2</sup>	<ul style="list-style-type: none"> <li>Measures intrusive thoughts or the tendency to ruminate on or avoid thoughts about stressors</li> </ul>
Brief Symptom Inventory-18 (BSI-18)Biegler <sup>2</sup>	<ul style="list-style-type: none"> <li>Assess different aspects of psychological distress</li> <li>Depression, anxiety, somatization</li> </ul>
Religious involvement Gall <sup>3</sup>	<ul style="list-style-type: none"> <li>Frequency of religious service attendance</li> <li>Perceived importance of religion in one's life</li> <li>Perceived importance of spirituality in one's life</li> </ul>
Religious coping(modified RCOPE) Gall <sup>3</sup>	<ul style="list-style-type: none"> <li>10 Subscales of RCOPE: Benevolent Religious Reappraisal (redefining stressful event as part of God's plan); Collaborative Religious coping (working together with God); Active Surrender (willingly giving control of events to God); Passive Religious Deferral (passively relinquishing the event to God); Pleading for Direct Intercession (asking for a miracle); Seeking Spiritual Support; Religious Focus (using religious activities as a distraction) Spiritual discontent (disappointment with God); Religious Helping (providing spiritual support to others); Seeking Religious Direction (looking to religion for new meaning and purpose)</li> </ul>
Functional Assessment of Cancer Treatment-Breast (FACT-B) Gall <sup>3</sup>	<ul style="list-style-type: none"> <li>only emotional well-being dimension was assessed and addressed in Gall's study</li> </ul>
Duke Religious Index (DRI) Jang <sup>5</sup>	<ul style="list-style-type: none"> <li>Religious activity (RA): organized religious activity + private religious activity</li> <li>Intrinsic religiosity (IR)</li> </ul>
Montgomery-Asberg Depression Rating Scale (MADRS) Jang <sup>5</sup>	<ul style="list-style-type: none"> <li>10 item instrument measuring depression</li> </ul>
Hospital Anxiety Depression Scale (HADS) Jang <sup>5</sup>	<ul style="list-style-type: none"> <li>HADS-A: 7 item anxiety subscale</li> <li>HADS-D: 7 item depression scale</li> </ul>
European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30) Jang <sup>5</sup>	<ul style="list-style-type: none"> <li>Global QOL</li> <li>Different dimensions of functioning</li> <li>Symptom subscale</li> </ul>
Single item questions Thune-Boyle <sup>11</sup>	<ul style="list-style-type: none"> <li>Current belief: "I feel certain that God in some form exists."</li> <li>To what extent they considered themselves R/S</li> <li>Strength of faith</li> </ul>

Coping Responses (COPE, Brief-COPE), Profile of Mood States (POMS), Profile of Mood States-Short Form (POMS-SF), Intrinsic religiosity (IR), Organized religious activity (ORA): Nonorganized religious activity (NORA), Perceived Stress Scale (PSS), Impact of Event Scale (IES), Brief Symptom Inventory-18 (BSI-18), Functional Assessment of Cancer Treatment-Breast (FACT-B), Montgomery-Asberg Depression Rating Scale (MADRS), Duke Religious Index (DRI), Hospital Anxiety Depression Scale (HADS), European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30), Quality of Life (QOL)

**Table 2:** Descriptions of outcome measurement instruments used in studies included in review

depression, anxiety, Non Organized Religious Activity (NORA), Organized Religious Activity (ORA), POMS (Profile of Mood States) and the COPE Inventory.<sup>14</sup> One study used a phenomenological approach to explore the patient's perioperative experience.<sup>13</sup>

All studies, including the study with the retrospective section, completed at least one interview or questionnaire in the month prior to or after surgery. None of the studies used the same timeframe for interview/survey completion. Three of the studies compared pre and post-surgery outcomes from one month prior to one month post-surgery.<sup>1,3,12</sup> One study included only post-surgery outcomes and three measured only pre-surgery outcomes.<sup>13,2,5,11</sup> If the studies included time point data outside of the timeline of our systematic review, that data was not included in our review. See table 3 for study conclusions pre- and post-surgery.

In the study of US Hispanic women with early stage breast cancer, Alferi examined differences between the effects of

religious involvement of Evangelical Christians versus Catholics, showing that religiosity and religious coping were higher for Evangelicals and that for Catholic women, getting support from Church members predicted higher levels of distress post-surgery. For both groups, distress decreased post-surgery.<sup>1</sup> The second study of US patients used structured interviews of patients and their husbands, and showed that survival was the greatest concern for both groups and that the uncertainty of the diagnostic phase before surgery was the most stressful for 80% of women and 53% of men. Patients also expressed stress during the time while they waited for the mastectomy, knowing that the cancer was still present in their bodies, and 44% of husbands reported the day of surgery as the most stressful point.<sup>15</sup> The study of men with urologic cancers was completed at the preoperative visit and showed that men reporting low R/S and greater education had greater perceived stress while those with no college education engaged in more avoidant coping. Overall, Religion/Spirituality (R/S) positively correlated with engagement coping.<sup>2</sup>

Author	Study Conclusions	Key Summary
Alferi <sup>1</sup>	<ul style="list-style-type: none"> <li>Compared to Catholics, Evangelical women: reported higher religiosity, levels of all types of religious coping and talking to a minister related inversely to distress</li> <li>Distress fell pre- to post-surgery (p=.01)</li> <li>Religiosity correlated with obtaining emotional support from church, attending church or prayer meetings, taking comfort in religion</li> <li>Compared to Catholics, Evangelical women: reported higher levels of talking to their ministers and less denial</li> <li>Higher religiosity correlated with emotional support from church member and attending church or prayer meetings</li> <li>Catholics: getting support from church members at pre-surgery predicted higher levels of distress post-surgery</li> <li>Evangelical: pre-surgical distress predicted lower attendance of church or prayer meeting post-surgery</li> </ul>	Increased religiosity had different effects depending on the religious denomination of the patients.
Biegler <sup>4</sup>	<ul style="list-style-type: none"> <li>Religion/Spirituality (R/S) positively correlated with engagement coping</li> <li>Social support inversely correlated with POMS/PSS, positively correlated with engagement coping</li> <li>Engagement coping positively correlated with IES, BSI, avoidant coping was positively associated with all measures of distress.</li> <li>Those with lower R/S scores, greater engagement coping associated with greater distress</li> <li>For men who scored high on R/S, there is inverse association between social support and PSS and POMS</li> <li>Non Caucasian, no college education engage in more avoidant coping</li> <li>Men reporting low R/S and greater education associated with greater perceived stress</li> </ul>	The relationship between R/S with coping mechanisms is complex and simplistic correlations may not be sufficient to describe these relationships.
Demir <sup>13</sup>	<ul style="list-style-type: none"> <li>Fear: that the lump was cancer; of surgery; their breast would be removed</li> <li>Spiritual needs: prayed that it would not be something bad; "I prayed even though I'm an unbeliever."</li> </ul>	Three major themes emerged from this study including patient's need for information, fear and spiritual needs.
Gall <sup>3</sup>	<ul style="list-style-type: none"> <li>Religious coping at pre-diagnosis to 1 wk pre-surgery: Increase in active surrender coping; religious helping; use of religious direction; use of religious focus.</li> <li><u>Religious coping as a predictor of concurrent adjustment</u></li> <li>Active surrender and collaborative coping predicted less distress</li> <li>Religious direction coping and pleading predicted greater distress</li> <li>Better well-being correlated with less pleading and spiritual discontent coping and greater use of religious helping</li> <li><u>Concomitant change between religious coping and adjustment across time</u></li> <li>From pre-diagnosis to 1 wk pre-surgery</li> <li>Increased spiritual discontent and pleading coping predicted increase in emotional distress</li> <li>decreased spiritual discontent and increased religious helping predicted increase in emotional well-being</li> <li>From 1 wk pre-surgery to 1 mo post-surgery, a decrease in pleading and increase in use of religious focus coping predicted an increase in well-being</li> <li><u>Religious coping as a predictor of concurrent adjustment at 1 mo post-surgery</u></li> <li>Greater use of spiritual discontent predicted greater distress (p=.0001)</li> <li>Greater use of collaborative and passive deferral coping and lesser use of spiritual discontent contributed to better well-being (p=.0001)</li> <li><u>Concomitant change between religious coping and adjustment across time</u></li> <li>From 1 wk pre-surgery to 1 mo post-surgery: increase in spiritual discontent and pleading coping predicted increased emotional distress</li> <li>From 1 wk pre-surgery to 1 mo post-surgery: decrease in pleading and increase in the use of religious focus coping predicted increase in well-being</li> </ul>	At the time of diagnosis with breast cancer, women used religious coping. At the time of surgery, use of support and comfort-related strategies peaked.
Jang <sup>5</sup>	<ul style="list-style-type: none"> <li>Scores on RA were significantly higher in Protestant than Catholic, Buddhist, and no-religious groups, in that order</li> <li>In all the groups with high intrinsic religiosity (IR), IR was negatively associated with depression</li> <li>Buddhist group: scores on the RA subscale negatively correlated with the HADS-D scores</li> <li>Catholic group: scores on the RA subscale were positively correlated with HADS-A scores</li> <li>Protestant group: scores on the RA subscale were positively correlated with the global subscale of the QLQ-C30</li> <li>No religious preference: scores on the IR subscale were negatively correlated with HADS-D</li> </ul>	Intrinsic religiosity was higher among Protestant and Catholics than for Buddhists or those with no religious preference, and increased intrinsic religiosity correlated to decreased HADS scores implying that it is not the religion but the intensity of religion that corresponds to decreased depression.
Nort-house <sup>12</sup>	<ul style="list-style-type: none"> <li>83% of women and 50% of husbands describe the diagnostic phase before surgery as the most stressful time: uncertainty about whether they had cancer; waiting for the mastectomy</li> <li>44% of the husbands reported the day of surgery as the most stressful</li> <li><u>Factors that helped patients and husbands cope</u></li> <li>Religious belief identified more frequently during the hospital period than at home 1 month later for women, 21% during hospitalization, 9% at home; for husbands, 13% during hospitalization and 4% at home</li> <li>Emotional support for patients, 87% during hospitalization, 72% at home; for husbands, 64% during hospitalization, 49% at home</li> </ul>	Patients and their husbands had different concerns around the time of surgery, with patients being concerned about the extent of disease and recurrence, while husbands worried about the survival of their wives.
Thune-Boyle <sup>11</sup>	<p>Patients both increased and decreased their R/S beliefs and practices at the time of surgery compared to the year prior</p> <ul style="list-style-type: none"> <li>26% of patients have increased private R/S practices</li> <li>21% perceived their strength of faith increased</li> <li>5-12% reported decreases in beliefs</li> <li>Belief in God was significantly higher at surgery</li> <li>Strength of faith increased at surgery</li> <li>Perceived levels of R/S and public R/S practices remained stable.</li> </ul>	In UK study, the patients perceived that they had an increased belief in God and strength of faith at the time of surgery, but no change in belief or practices. For most patients, there was an increase in beliefs and religious practices at the time of surgery.

Profile of Mood States (POMS), Perceived Stress Scale (PSS), Impact of Event Scale (IES), Brief Symptom Inventory (BSI), Hospital Anxiety Depression Scale-Anxiety (HADS-A), Hospital Anxiety Depression Scale-Depression (HADS-D), Quality of Life Questionnaire Core 30 (QLQ-C30), Religious Activity (RA)  
Abbreviations: Week (wk), month (mo)

Table 3: Major study conclusions and key study summary

The phenomenological study of Turkish women who had excisional breast biopsies established three main themes: fear (that the lump was cancer, fear of surgery, fear breast would be removed); the need for information (about surgery and illness); and spiritual needs (prayer that the lump was not something bad).<sup>13</sup> Baseline results of Jang's study of South Korean breast cancer patients showed that Religious Activity (RA) was higher for Protestants than Catholics, Buddhists and those associated with no religion. In all groups with high Intrinsic Religiosity (IR), IR was negatively associated with depression.<sup>5</sup> The study of Canadian breast cancer patients included several data points, but the data pertinent to this review showed that from one week before surgery to one month after surgery, a decrease in pleading and increase in use of religious focus coping predicted an increase in well-being. Improved well-being correlated with lesser use of pleading and spiritual discontent coping and a greater use of religious helping.<sup>3</sup> The patient population of the breast cancer patients from the United Kingdom (Protestant, Catholic, Jewish, no religion) was religiously diverse similar to the patient population from the South Korean study (Protestant, Catholic, Buddhist, no religion). The UK patients answered R/S questions post-surgery and recalled their beliefs in the year prior. Results showed that R/S beliefs both increased and decreased from the year prior to surgery to the immediate post-operative period, but overall, it showed that belief in God was significantly higher at surgery and that patients' belief in God was significantly higher at surgery.<sup>11</sup>

## DISCUSSION

As identified in this systematic review, the current literature is limited in its evaluation of R/S of the cancer patient in the perioperative period. Existing studies are almost exclusively in women with stage I and II breast cancer. Even though the studies evaluate patients of different cultures, the studies do not expand on the effect of ethnicity and culture on religious and spiritual needs.

Studies examined the stress response and coping, and their interplay with religiosity and spirituality, including the type of religious coping employed by the patient. Based on these studies, patients with higher religiosity/spirituality have better engagement or active coping but that simplistic associations between R/S and coping are inadequate to explain R/S needs of patients for coping and responding to stress. The data stating that R/S have a positive effect on patient outlook, physical and mental well-being is variable and this is identified not only when comparing US to UK cancer patients, but also when comparing patients of different faiths and different denominations of the same faith. One consistent theme from several of the studies is that the perioperative period is a time of exaggerated stress for patients and their families but the reason for the stressful nature of the time period is different for patient as compared to family member. During the perioperative period, patients expressed fear of the cancer and fear of the surgery, while the spouse of

the breast cancer patient expressed increased stress during both the pre-surgery diagnostic phase and the post-surgical treatment period.<sup>12</sup>

Factors of ethnicity and culture, which intrinsically are linked to religion and religious practices, likely contribute to variability in how R/S affect patient coping. When comparing US populations with other populations, the Gallup Daily tracking survey from 2011 reports that the US population is predominantly a Christian nation with 78% adults identifying with Christianity, 82.5% have some form of religious identity and 92% of Americans say that they believe in God.<sup>16</sup> In comparison, 12% of the UK population attends church regularly, 51% with some belief in God and 12% without doubt of God's existence.<sup>17</sup> Thune-Boyle et al argue that since most studies on the topic of R/S and patient coping have been completed in the US, their conclusion about R/S are difficult to transfer outside of North America,<sup>11</sup> even to other English-speaking patient populations. Pertinent to the three studies examining North American populations, Koenig finds that African Americans are more likely than other ethnic groups to use religion for coping.<sup>18</sup> Within the US Latino population, patients come from a geographic background as large as the US itself and the religious and cultural practices vary even within populations from similar geography with patients mostly associating with either a Christian evangelical denomination church or Catholicism.<sup>1</sup> Even if direct comparison of the studies completed in the US cannot be made with non-US studies, Demir's phenomenological study made a clear argument that the female patients studied in Turkey needing excisional biopsies have spiritual needs in the perioperative period.<sup>13</sup> R/S needs may vary by culture, but across cultures patients have unique R/S needs in the perioperative period.

## STUDY LIMITATIONS

One limitation of this review is that these studies focused on cancer patients with good prognosis: female breast cancer patients with early stage disease and men with prostate cancer. Early stage breast cancer (stages I and II) has a 5 year survival rate of 93%.<sup>19</sup> Similarly, the 5 year survival rate is over 99% for all stages of prostate cancer.<sup>20</sup> Many patients turn to R/S when faced with a life-threatening illness such as cancer<sup>17,3</sup> but the aggressive nature of the cancer may affect a patient's emotional, spiritual and religious needs. For patients with advanced or incurable cancer, R/S may take on a different meaning as they face the inevitability of death. This is in contrast to patients with cancers of generally good prognosis who face the uncertain future of cancer survival.<sup>3</sup> Another potential limitation is that these studies were geographically diverse and thus, generalizability to specific populations is unclear. Also, we included only English language studies and thus, may have missed important non-English studies.

In addition, the Mesh search terms for religion and

spirituality are still immature and current literature could have been misclassified and not captured in this search. Other important key words related to religion and spirituality such as sense of peace, meaning and purpose of life were not used as part of the search strategy and thus articles relevant to religion and spirituality through connection with these terms may have been missed in the systematic review.

#### FURTHER RESEARCH

Though inferences can be made from other studies that are broader in their time frame, more studies are needed that explore the religious and spiritual needs of perioperative patients and clinicians. The effect of R/S for oncologic surgical patients can be variable, having either a beneficial or negative effect on their outlook and sense of well-being.<sup>11</sup> In Nelson's study on religion and spirituality in prostate cancer patients, patients were found to have less depression when they had a sense of meaning and peace but not necessarily more religious involvement.<sup>21</sup> Given the variable effect of R/S, future studies could focus more on spirituality and explore what gives the perioperative patient a sense of meaning and peace. Further research is needed to identify factors that make the perioperative time period a uniquely stressful experience for patients and their families and how religion and spirituality may affect perioperative coping. Understanding more specifically what causes stress for patients during the perioperative time period may help perioperative providers better understand the R/S needs of their patients and give more complete care during the time before and after their oncologic surgeries.

#### CONCLUSION

In the past, spirituality had a recognized role in health care, but during the 20th century, spirituality and health care were separated as health care became more scientific and technological.<sup>22</sup> Physicians and other health care providers have received limited education in their role in caring for the spiritual and religious needs of the oncologic surgical patient, even though there are currently efforts to bring spirituality back to medical school education.<sup>22</sup> Hospital chaplains should be part of inter disciplinary teams caring for the oncologic patient and physicians and other care providers should understand the uniquely stressful time of the perioperative time frame so that the patients can receive treatment of their whole person, not just treatment of their cancer.<sup>23</sup> The perioperative time frame is a stressful period for cancer patients and their family members as they encounter a diagnosis of cancer, experience the loss of control during surgery, and face uncertain recovery. Understanding that unique religious and spiritual needs of the oncologic patient requires an understanding of the exaggerated stress of the perioperative period and further research is needed to better understand how better incorporation of religious and spirituality practices can

improve the perioperative experience for patients, their families, and their providers

#### ACKNOWLEDGMENTS

The authors would like to thank Blair Anton Associate Director, Clinical Information's Services William H. Welch Medical Library Johns Hopkins Medical Institutions, for her assistance with this systematic review.

#### CONFLICTS OF INTEREST

The authors have no potential conflicts of interest with respects to the research or authorship of this article.

#### AUTHOR DISCLOSURE STATEMENT

JH and JC received no financial support for this research, authorship and/or publication of this article. RAA was supported by a Foundation for Anaesthesia Education and Research grant and a Johns Hopkins School of Medicine Clinician Scientist Award. No competing financial interests exist.

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