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ORIGINAL ARTICLE

Using patient-reported religious/spiritual concerns to identify patients who accept chaplain interventions in an outpatient oncology setting

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Abstract

Purpose The goals of this study were to (1) describe the prevalence and correlates of patient-reported religious/spiritual (R/S) needs in outpatient oncology patients and (2) estimate the associations of R/S concerns with acceptance of an R/S intervention offered by phone.

Methods This was a retrospective analysis of data collected from distress screenings and spiritual care interventions at an outpatient cancer center from March 1, 2017 to May 9, 2017. Patients ($n = 1249$) used a tablet to self-report the following R/S concerns: *spiritual or religious concern*, *isolation*, *struggle to find hope/meaning in life*, *concern for family*, *fear of death*, *shame/guilt*, and *doubts about faith*. Patients were also screened for anxiety, depression, and distress. A chaplain contacted patients that reported one or more R/S concerns to offer R/S interventions via telephone or in person.

Results Approximately one third (29.9%) of surveyed patients indicated at least one R/S need. Younger age, female gender, anxiety, depression, and distress were associated with indication of specific R/S concerns. *Fear of death* (OR 1.64 [1.02, 2.66], $p = 0.043$), *struggle to find meaning/hope in life* (OR 2.47 [1.39, 4.39], $p = 0.002$), and anxiety ($p = 1.003$) were associated with increased odds of intervention acceptance.

Conclusion Effective screening practices are needed for chaplains to prioritize patients most in need. This exploratory study suggests that screening for *struggle to find meaning/hope in life*, *fear of death*, and anxiety will help chaplains identify patients who have R/S concerns and will likely accept R/S interventions. Developing effective telehealth practices like this is an important direction for the field.

Keywords Chaplaincy service · Oncology · Patient-reported outcomes · Telehealth · Spiritual screening · Outpatient

Background

Religious/spiritual (R/S) needs exist at all stages of cancer continuum [1, 2], with up to 91% of advanced cancer patients voicing R/S concerns [3, 4]. Addressing these needs has important benefits, including improved quality-of-life [4], improved perceptions of quality-of-care [3, 5, 6], shorter intensive care unit (ICU) stays [7], and lower end-of-life costs [7]. In contrast, patients who receive less R/S care than desired have more depressive symptoms and report less meaning in life [3].

Yet, despite the benefits, large segments of patients who want R/S care never receive it. Studies show that between 40% and 72% of cancer patients report that their R/S needs were insufficiently met or not met by the medical system [3–5]. Moreover, these needs often are not met outside of

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the medical system. A study by Balboni and colleagues reports that 56% of people attended religious services prior to their cancer diagnosis, but only 44% of patients attended after diagnosis due to debilitating symptoms or decreased immunity which endangered their attendance [7].

Unmet R/S needs stand in contrast to recent trends in oncology care, in which patients' psychosocial needs are being better met than in the past [8, 9]. Central to the problem is that most chaplaincy departments are not large enough to meet all patients with R/S needs [10]. Moreover, it is difficult to effectively identify patients who would benefit from R/S services, because patients with the highest R/S needs and lowest R/S resources do not request a chaplain [10]. Research suggests that even when patients are facing multiple stressors, if they have low exposure to R/S resources, they are unlikely to request R/S care [10]. Seeing these results, Fitchett and colleagues suggest that future research creates screening models that would identify patients with high R/S needs and low R/S resources who would not ask for a chaplain themselves [10].

Currently, R/S needs are usually screened by medical staff [11], and studies have shown that R/S training is successful in increasing referrals from medical students [12, 13], nurses [14, 15], and physicians [12, 16]. However, practitioner-based R/S referrals have several limitations, including practitioners' lack of time [17, 18], not seeing R/S as part of one's professional role [19], lack of personal R/S limiting one's likelihood to make a referral [20–22], misunderstanding what it means to address R/S needs [17], making referrals based solely on critical medical situations, but not on R/S need [22], misunderstanding the chaplain's role [23], and discomfort with discussing R/S matters [18]. Additionally, training staff for R/S referrals is time intensive, taking up to 16 h in some interventions [15]. Even if all the limitations for using medical staff for R/S screening could be addressed, small chaplaincy departments may not be able to sustain training sessions with high medical practitioner turnover and limited chaplain staff.

An alternative method is using patient-reported outcomes (PROs) to screen patients for R/S need and to signal chaplain referral. Many healthcare departments have employed PROs to identify patients who may need specific services [24, 25]. However, use of PROs for R/S referral has not been used. Instead, R/S PROs have mainly been used for research examining prevalence of spiritual needs [2, 26–28], with one study examining associations between expressed spiritual concerns and likelihood of making a chaplain request [2]. To our knowledge, the utilization of PROs to identify the patients who would accept R/S care without asking for a chaplain has not been done. Moreover, research of this type tends to focus on the inpatient setting, rather than the outpatient setting, where most oncology care is delivered. This is a methodological gap and an impediment to holistic care.

The purpose of this exploratory study was twofold: (1) to describe the prevalence and correlates of patient-reported R/S concerns in outpatient oncology patients and (2) to estimate the associations of R/S concerns with acceptance of an R/S intervention offered by telephone.

Methods

Sample

This study was a retrospective analysis of data collected at Levine Cancer Institute–Morehead (LCI-M), a large, outpatient, cancer center in Charlotte, North Carolina. The study protocol was approved by Carolinas Healthcare System (IRB#07-17-16E). From March 1, 2017 to May 9, 2017, all LCI-M consults in surgical oncology, medical oncology, supportive oncology, or radiation oncology simulation were asked to complete an assessment with a tablet screening tool prior to their medical appointment. The questions evaluating R/S need were (1) "Do you have spiritual or religious concerns?" (response yes or no) and (2) "Select any of the following emotional/spiritual concerns you are experiencing: *struggle to find meaning/hope in life*, *doubts about your faith*, *concern for family*, *isolation*, *shame/guilt*, *fear of death*." All concerns were eligible for multi-selection. The seven R/S needs were selected from a list of pre-established PRO options on the screening tool application. Each R/S need was selected for its correlation with Galek and colleagues' seven constructs: (1) love/belonging/respect (*isolation*/*concern for family*), (2) the divine (*spiritual*/*religious concerns*, *doubts of faith*), (3) positivity/gratitude/hope/peace (*struggle to find meaning*/*hope in life*), (4) meaning and purpose (*struggle to find meaning*/*hope in life*), (5) morality and ethics (*shame*/*guilt*), (6) appreciation of beauty (*struggle to find meaning*/*hope in life*), and (7) resolution/death (*fear of death*) [27]. Needs such as *concern for family* and *isolation* were considered R/S needs because of the affect isolation from intimate relationships has on meaning and peace [2]. Answers were in yes/no formatting to have a similar configuration to Moadel and colleagues' study [2]. This allows for comparison of results on prevalence of R/S needs among cancer patients from both studies. Patients also were assessed for depression with the Patient Health Questionnaire-2 Scale (PhQ2), [29], anxiety with the Generalized Anxiety Disorder Scale-2 Item Scale (GAD2) [29], and distress with the distress thermometer (DT) [30].

A chaplain telephoned each patient who indicated at least one R/S need. If the patient did not answer the phone,

the chaplain left a HIPAA-adherent message introducing herself as a member of the spiritual care department, asking for a follow-up telephone call, and delivering contact information. No information was included in the message about diagnosis or reason for referral. The name of the hospital was used rather than the Cancer Institute to protect other people from knowing about the patient's health information. Data were collected to track when telephone messages were delivered and subsequently returned by the patient.

If the patient answered, the chaplain introduced herself and began rapport-building conversation based on a script containing opening introductions, potential questions, and probing questions/comments. After introductory conversation, the chaplain would explain the purpose of the call, unless the conversation progressed to R/S concerns without a direct statement of the purpose. The chaplain offered R/S care interventions when appropriate. Interventions included R/S counseling over the telephone, offering prayer or R/S ritual during the call, scheduling an R/S counseling appointment, or a follow-up telephone call. A conversation was classified as R/S counseling only if R/S subject matter was discussed. Supportive conversations that did not include R/S subject matter were not coded as R/S counseling, as they are not chaplain-specific. In order to make this delineation, the chaplain relied on parameters taken from Kenneth Pargament's definitions of religion and spirituality. Pargament defines religion as "a search for significance that occurs within the context of established institutions that are designed to facilitate spirituality," and spirituality as "a process, a search for the sacred" [31, p. 258–259]. If the chaplain's conversation with the patient involved discussion of an individual's significance, the sacred, search for meaning, or referenced a person's formal religion or specific spiritual practices, it was delineated as R/S counseling. Results were documented after the call. Demographic information was obtained from the patient's chart and the screening survey.

Statistical methods

Prevalence of R/S concerns was summarized and described using counts and percentages. Patient characteristics and PROs were summarized and compared by expression of individual R/S concerns using Fisher's exact tests for categorical variables and Kruskal-Wallis tests for continuous variables. Univariate and multivariate logistic regressing modeling was used to estimate the odds of acceptance of intervention by R/S need, adjusting for patient characteristics and PROs. Multivariate model selection was accomplished using a stepwise selection procedure. Statistical analyses were performed using SAS 9.4 (SAS Institute, Cary, NC).

Results

Demographic information

Assessments were completed by 1249 unique patients, of which 412 reported at least one R/S need. Of the 412 respondents, 12 did not speak English as a primary language, one died shortly after completing the survey and prior to contact, one had no contact information, one interacted with the chaplain in clinic prior to completing the survey, and 23 did not generate a timely referral because of technical issues with the tablet application. These entries were excluded from later study. The remaining 374 patients who voiced R/S need were used to determine which patients were more likely to accept R/S care interventions. Demographic information is recorded in Table 1 in Appendix.

Prevalence of R/S concerns

Of the total sample, 374 out of 1249 patients (29.9%) indicated at least one spiritual need. The frequency of patient-reported R/S concerns is shown in Table 2. The most frequently indicated R/S concern was *concern for family* (74.6%), followed by *fear of death* (27.5%).

Correlates of R/S concerns: any need and each R/S need

Females were more likely than males to indicate at least one R/S concern ($p = 0.036$) (see Table 1) and to indicate *isolation* ($p = .006$) (see Table 3). Patients indicating at least one spiritual concern were more likely to indicate high distress ($p < 0.001$), anxiety ($p < 0.001$), and depression ($p < 0.001$). Indication of *fear of death*, *isolation*, *struggle to find meaning or hope in life*, and *shame/guilt* was associated with younger age (see Table 3); however, there was no association between indication of any R/S concern with age ($p = .398$) (see Table 1).

Patient-reported outcomes generating chaplain interventions

Of the 374 patients who indicated R/S concerns, 27 patients had a family member answer the phone who were not capable of delivering a message or had no option to leave a telephone message. One hundred thirty-three did not answer the phone and received telephone messages, of whom 26 returned a call. R/S care interventions were accepted by 120 patients (32.1%). Phone interventions (i.e., prayer, R/S counseling, other ritual), in comparison to in-person follow-up meetings and prayers, were the most common interventions offered (see Table 4).

In univariate logistic regression models, indication of *fear of death* (OR 1.64 [1.02, 2.66], $p = 0.043$) or *struggle*

to find meaning/hope in life (OR 2.47 [1.39, 4.39], $p = 0.002$) was associated with increased odds of R/S intervention acceptance. The associations maintained statistical significance when adjusted for age, gender, race, and ethnicity in the multivariate model (see Table 5). Those indicating anxiety were also more likely to accept a R/S intervention ($p = 0.003$) (see Table 6).

Discussion

This exploratory study is novel and provides an important foundation for directing conversations about the future of chaplaincy care. As medical care becomes increasingly delivered in the outpatient setting, it is important for cancer centers to meet spiritual needs via distance formats. This is the first study examining uptake of telephone chaplaincy interventions and offers possible directions of how to use limited chaplain resources to meet R/S needs in the outpatient setting.

Prevalence of religious/spiritual needs

Thirty percent of cancer outpatients report at least one R/S concern, a comparable estimate to Moadel and colleagues' study in which 1 in 3 patients was found to have unmet R/S concerns [2]. However, this prevalence is significantly lower than that reported in advanced care inpatients (91%) [3]. The disparity attests to the importance of refining a screening for R/S concerns in outpatient cancer settings, as it cannot be assumed that nearly all patients have unmet R/S concerns. With small spiritual care departments, chaplains need to be able to best triage patients with unmet R/S needs in order to prioritize care.

The higher prevalence of R/S concerns that do not specifically mention religion or spirituality (*concern for family*, *fear of death*, *isolation*, *struggle to find meaning/hope*, and *shame/guilt*) versus concerns with R/S-specific language (*spiritual/religious concerns* and *doubts of faith*) supports previous findings on R/S needs. These non-faith specific needs align with the prevalence of R/S concerns identified by Moadel and colleagues, with *overcoming fears* and *finding hope* ranking highest [2]. Moreover, this supports narrative accounts of chaplains focusing on meaning-making in a broader sense, rather than using religious or spiritual terminology to identify needs [32, 33]. Future research should be aimed at exploring this delineation and developing tactics appropriate to this demographic.

Correlates of R/S concerns

The demographic correlates of specific R/S concerns align with previous findings. Younger age is associated with increased R/S concerns [34–37], perhaps due to less experience facing traumatic circumstances, one's age cohort not having similar experiences, or discordance with expectations at younger life stages. Women reporting greater feelings of *isolation* support studies that claim women have a higher need for social support compared to men [37]. Lastly, our study affirms that anxiety, depression, and distress are correlated with R/S concerns, a finding supported by other studies [38–40]. Since spirituality has been shown to combat these negative mental health outcomes [41], directing R/S care to patients with these factors is an important part of promoting holistic health.

Patient-reported needs generating chaplain interventions

Perhaps the most important finding of this study is that patients who indicated *struggle to find meaning and hope in life* or *fear of death* were the most likely to accept R/S interventions. These results partially align with previous findings, while offering new insight. Moadel and colleagues also found that patients desired R/S support when dealing with *lack of meaning/hope*, though it was secondary to the desire to *discuss overcoming fears* [2]. Since both studies identify *struggle to find meaning and hope in life* as a powerful indicator for generating an R/S referral, this domain appears key for future assessments. However, our findings differ from those of Moadel and colleagues. in that patients indicating *fear of death* were more likely to accept a chaplain intervention, whereas Moadel found patients who struggle with *fear of death* to be least likely to request a chaplain [2]. Perhaps, patients are not likely to request R/S support when facing fears of death but will accept the support when it is offered [10]. Future studies are needed to explore whether this theory is correct, as this can revolutionize the way that chaplaincy is delivered to patients with terminal or potentially terminal diagnoses.

Another important finding from this study is that patients with anxiety, depression, and distress were more likely to indicate R/S need, but only patients indicating anxiety were more likely to accept an R/S intervention. These results support Piderman and colleagues' findings that 76.2% of patients wish to talk to a chaplain "at times of particular anxiety or uncertainty" [42]. Anxiety is defined as "a common response to threats of uncertainty, suffering and mortality [43, p. 1197]" and thus entails one's religious and spiritual views. A chaplain's training in discussing death, existential stress, and R/S viewpoints makes chaplains an ideal referral for patients experiencing anxiety.

Distress also has spiritual components [44], so it is surprising that indication of distress was not correlated with uptake of R/S intervention. However, distress can be more directly related to practical problems than existential issues [44]. Many of the chaplain's conversations resulted in referrals to other services to address practical problems and were not categorized as R/S conversations. This may have been a result of people attempting to reduce distress through addressing

practical concerns. These concerns mainly involved financial issues or navigating appointment schedules. These questions are essential to answer to provide good care for the patient. The chaplain uncovering these needs was ultimately beneficial for the patient. However, in order to ensure that professionals are working at the top of their licensure and in order to provide more immediate answers, these questions might be better addressed through the development of a nurse navigator making telephone calls to uncover these issues and answer them directly. Alternatively, the chaplain being early-career, and not yet having professional skills for addressing distress, could have affected this result. Future studies would benefit from using chaplains with more experience.

Another limitation affecting uptake of interventions by people with distress could have been a single attempt to provide R/S care by phone. For people experiencing distress, this single opportunity may not have been sufficient time for divulging R/S concerns. Similarly, this could have affected uptake of interventions with people experiencing depression, since they may be less likely to seek help due to stigma [45]. One telephone call is likely not sufficient to break down these barriers in order to offer interventions. Future research should examine whether multiple contacts by a chaplain affect uptake of R/S interventions.

Another interesting finding from our study is that patients were more likely to accept R/S counseling (25.1%), prayer (17%), and follow-up appointments (2%) via telephone than R/S counseling (4.9%) or prayer (1.2%) delivered in-person. Anecdotally, many patients voiced being thankful for support while they were in the comfort of their own home. Thus, a strength of telephone interventions is the ability to serve patients conveniently and comfortably. This is a new direction for R/S care, because in the past, practice has focused on being physically present with patients. However, as suggested in this study, physical presence with a patient is not necessary for delivering R/S care. Chaplaincy must step-up to the opportunity of meeting patients in settings which are most convenient for them, and future studies are needed to develop effective methods for tele-chaplaincy.

Strengths and limitations

This is the first study examining uptake of telephone chaplaincy. There are several novel components of this approach. First, this study examines patients' *acceptance* of interventions, rather patients' *requests* for chaplains. As patients who most need R/S support are least likely to request it [10], acceptance is an important outcome to examine. Secondly, this study focuses on outpatients rather than inpatients. As more medical care is provided in outpatient settings, it is important for chaplains to have evidence-based practices to meet R/S need. This study is foundational for the application of R/S care in the future. Qualitative studies could explore reasons why certain patients are more likely to accept interventions and build upon these existing exploratory findings. Another strength is the large sample size of 1249 patients that exceeds that of previous studies and provides power to detect associations. Lastly, recording specific benchmarks, like returned phone calls from voicemails, and specific interventions offered to patients provides applicable information for clinical practice.

There were several limitations to the study. First, this was not an experimental or quasi-experimental study, but instead a retrospective, descriptive study. As such, caution should be paid to applying results to different religious, racial, or geographic constituents. Secondly, one early-career chaplain performed all interventions and made the determination of whether the visit met "R/S" categorization criteria to determine whether the patient accepted an R/S intervention; thus, future studies that assess intervention uptake across multiple chaplains with more experience are needed. Thirdly, resources only allowed for one telephone call; therefore, if the patient did not answer or did not return the call, they were not able to be offered the intervention. Moreover, one phone call may not have been enough to create a safe environment for some patients to discuss sensitive matters. Another limiting factor is that there were 23 patients with R/S need who were not reported by the application. This is a limiting factor of using online or technical formats to deliver services. Efforts to improve delivery of tablet questionnaires should be made. However, while these limitations should be considered, they do not negate the value of this project. This exploratory research begins the discussion of how to use PROs for R/S assessment and how to deliver chaplaincy via distance formats—both of which are relatively unexplored.

Conclusion

Developing effective tele-chaplaincy practices is an important direction for the field, as oncology care becomes increasingly an outpatient practice. This study is an important step in addressing patients who have limited opportunity to request the R/S care they need within the limited timeframe of outpatient appointments. As shown in this study, using PROs to generate referrals may represent an important direction for the field. Using this methodology, chaplaincy departments might better meet the needs of a growing patient population.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Authors have full control of primary data, and will allow the journal to review de-identified data upon request.

Appendix

Table 1 Patient characteristics ($n = 1249$)

	Indicated any R/S concern ($n = 374$)	No R/S concern indicated ($n = 875$)	
Variable	Mean (std)	Mean (std)	p value
Age at assessment	57.0 (14.5)	57.8 (15.4)	0.398
Distress (0–10)	5.8 (2.6)	4.0 (2.9)	< 0.001***
Anxiety (0–6)	2.4 (1.9)	1.0 (1.5)	< 0.001***
Depression (0–6)	2.0 (1.8)	0.8 (1.3)	< 0.001***
	Frequency (%)	Frequency (%)	p value
Gender			0.036*
Female	248 (66.3)	525 (60.0)	
Male	126 (33.7)	350 (40.0)	
Race			0.415
Black or African American	85 (22.7)	192 (21.9)	
White	276 (73.8)	626 (71.5)	
Other, unknown, or prefer not to answer	13 (3.5)	57 (6.5)	
Ethnicity			0.058
Hispanic or Latino	8 (2.1)	38 (4.3)	
Not Hispanic or Latino	356 (95.2)	761 (87.0)	
Unknown or prefer to answer	10 (2.7)	76 (8.7)	
Religion			
Atheist	1 (0.3)	Not captured in assessment	
Christian	155 (41.4)		
Hindu	2 (0.5)		
Jehovah's Witness	3 (0.8)		
Muslim	1 (0.3)		
Seventh Day Adventist	1 (0.3)		
Unknown or prefer not to answer	211 (56.4)		

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

Table 2 Indication of patient-reported R/S concern ($n = 374$)

R/S concern	No. of patients indicating concern	% of those indicating at least 1 R/S concern ($n = 374$)	% of total population ($n = 1249$)
Concern for family	279	74.6	22.3
Fear of death	103	27.5	8.2
Isolation	64	17.1	5.1
Struggle to find meaning/hope	60	16.0	4.8
Spiritual or religious concern	44	11.8	3.5
Shame/guilt	43	11.5	3.4
Doubts of faith	21	5.6	1.7

Table 3 Association of patient characteristics and indication of R/S concerns ($n = 1249$)

Variable	Indication of specific R/S concern Mean (std), percent	No indication of specific R/S concern Mean (std), percent	p value
Concern for family ($n = 279$)			
Age at assessment (years)	57.3 (14.0)	57.6 (15.4)	0.505
Gender: female	23.8%	76.2%	0.113
Gender: male	20.0%	80.%	
Distress (0–10)	5.8 (2.6)	4.2 (2.9)	< 0.001***
Anxiety (0–6)	2.4 (1.9)	1.2 (1.6)	< 0.001***
Depression (0–6)	2.0 (1.8)	0.9 (1.4)	< 0.001***
Fear of death ($n = 103$)			
Age at assessment (years)	53.5 (15.2)	57.9 (15.1)	0.009**
Gender: female	8.9%	91.1%	0.266
Gender: male	7.1%	92.9%	
Distress (0–10)	6.4 (2.5)	4.4 (2.9)	< 0.001***
Anxiety (0–6)	3.2 (1.8)	1.3 (1.6)	< 0.001***
Depression (0–6)	2.5 (1.9)	1.0 (1.5)	< 0.001***
Isolation ($n = 64$)			
Age at assessment (years)	52.4 (16.3)	57.8 (15.0)	0.003**
Gender: female	6.5%	93.5%	0.006**
Gender: male	2.9%	97.1%	
Distress (0–10)	6.8 (2.1)	4.4 (2.9)	< 0.001***
Anxiety (0–6)	3.4 (1.9)	1.3 (1.7)	< 0.001***
Depression (0–6)	3.0 (1.8)	1.0 (1.5)	< 0.001***
Struggle to find meaning/hope ($n = 60$)			
Age at assessment (years)	52.7 (14.1)	57.8 (15.1)	0.004**
Gender: female	5.3%	94.7%	0.292
Gender: male	4.0%	96.0%	
Distress (0–10)	7.0 (2.1)	4.4 (2.9)	< 0.001***
Anxiety (0–6)	3.7 (1.9)	1.3 (1.7)	< 0.001***
Depression (0–6)	3.4 (1.9)	1.0 (1.5)	< 0.001***
Spiritual or religious concern ($n = 44$)			
Age at assessment (years)	57.4 (13.6)	57.5 (15.2)	0.888
Gender: female	3.5%	96.5%	0.942
Gender: male	3.6%	96.4%	
Distress (0–10)	5.9 (2.8)	4.5 (3.0)	0.001**
Anxiety (0–6)	2.2 (2.0)	1.4 (1.7)	0.008**
Depression (0–6)	2.3 (1.9)	1.1 (1.6)	< 0.001***
Shame/guilt ($n = 43$)			
Age at assessment (years)	51.5 (11.6)	57.7 (15.2)	0.002**
Gender: female	3.5%	96.5%	0.901
Gender: male	3.4%	96.6%	
Distress (0–10)	7.1 (2.0)	4.5 (2.9)	< 0.001***
Anxiety (0–6)	3.3 (1.8)	1.4 (1.7)	< 0.001***
Depression (0–6)	3.0 (1.9)	1.1 (1.5)	< 0.001***
Doubts of faith ($n = 21$)			
Age at assessment (years)	53.3 (11.3)	57.6 (15.2)	0.100
Gender: female	2.1%	97.9%	0.174
Gender: male	1.1%	99.0%	
Distress (0–10)	7.0 (2.1)	4.5 (3.0)	< 0.001***
Anxiety (0–6)	3.2 (1.6)	1.4 (1.7)	< 0.001***
Depression (0–6)	2.6 (1.8)	1.1 (1.6)	< 0.001***

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

Table 4 Interventions provided to patients indicating R/S concerns

Intervention	*n* (% of 347)
R/S counseling by telephone	87 (25.1%)
Prayer by telephone	59 (17.0%)
Prayer at follow-up in-person appointment	4 (1.2%)
R/S counseling at follow-up in-person appointment	17 (4.9%)
R/S counseling at follow-up telephone call	7 (2.0%)
Any R/S interventions	120 (34.6%)

*Some patients offered multiple interventions

Table 5 Association of indicating any R/S concern with receiving R/S intervention

	Univariate model		Multivariate model*	
R/S concern	OR (95% CI)	*p* value	OR (95% CI)	*p* value
Concern for family	1.13 [0.67, 1.89]	0.649	1.60 [0.89, 2.88]	0.115
Fear of death	1.64 [1.02, 2.66]	0.043*	1.70 [1.00, 2.88]	0.049*
Isolation	0.99 [0.55, 1.77]	0.978	0.88 [0.46, 1.68]	0.692
Struggle to find meaning/hope	2.47 [1.39, 4.39]	0.002**	2.95 [1.51, 2.79]	0.002**
Spiritual or religious concern	1.54 [0.78, 3.02]	0.212	1.70 [0.52, 3.51]	0.151
Shame/guilt	0.73 [0.36, 1.48]	0.384	0.50 [0.22, 1.13]	0.094
Doubts of faith	1.41 [0.55, 3.59]	0.48	0.84 [0.28, 2.55]	0.763

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

*Age, gender, race, and ethnicity

Table 6 Association of anxiety, depression, and distress scores with receiving an intervention

	Did receive intervention ($n = 120$)	Did not receive intervention ($n = 227$)	
Variable	Median [min, max]; mean (std)	Median [min, max]; mean (std)	*p* value
Anxiety (0–6)	2.8 (2.0)	2.1 (1.8)	0.003**
Depression (0–6)	2.3 (2.0)	1.8 (1.7)	0.066
Distress (0–10)	6.0 (2.9)	5.7 (2.5)	0.187

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

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