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Original Article

Optimism and social support as contributing factors to spirituality in Cancer patients

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Abstract

Background/objective

The impact a cancer diagnosis and its treatment are affected by psychosocial factors and how these factors interrelate among themselves. The objective of this study was to analyze the relationship between optimism and social support in spiritual wellbeing in cancer patients initiating chemotherapy.

Methods

A cross-sectional, multi-center (15 sites), prospective study was conducted with 912 cancer patients who had undergone curative surgery for a stage I–III cancer and were to receive adjuvant chemotherapy. They completed the Functional Assessment of Chronic Illness-Spiritual Well-being Scale (FACIT-Sp), Life Orientation Test-Revised (LOT-R), and the Multidimensional Scale of Perceived Social Support (MSPSS).

Results

Significant differences on spirituality scales (meaning/peace and faith) were detected depending on age (≤ 65 vs > 65), sex, marital status, employment, and cancer treatment. Married or partnered participants had significantly higher meaning/peace scores compared to their non-partnered counterparts ($p = 0.001$). Women, > 65 years, unemployed, and patients treated with chemotherapy and radiotherapy had significantly higher faith scores versus men, ≤ 65 years, employed, and subjects only receiving adjuvant chemotherapy (all $p < 0.030$). Multivariate analyses indicated that meaning/peace and faith correlated positively with optimism and social support.

Conclusion

During oncological treatment, the positive effects of optimism and social support exhibit a positive correlation with spiritual coping. A brief assessment evaluation of these factors can aid in identifying at risk for a worse adaptation to the disease.

Keywords

Spirituality
Optimism

Social support
Cancer

Introduction

AQ3

A cancer diagnosis is one of the most stressful medical situations a person may have to face. Cancer entails the perspective of multiple treatments and risky, complex actions associated with loss—be it the loss of the resected organ, employment, social life, and even life itself. The patient must make decisions within a context fraught with uncertainty about their prognosis.

AQ4

Spirituality is an essential human dimension and an especially relevant resource in personally threatening situations, as is the case of a diagnosis of cancer and its treatment [1, 2, 3]. The mere fact of having to face one's own mortality precipitates a series of existential questions regarding meaning or purpose. Spirituality serves cancer patients to cope with their illness and make treatment-related decisions [4, 5]. There is evidence that spirituality and religion positively affect patients' quality of life and gives them hope, comfort, and meaning to their experience [1, 6, 7, 8]. Given the importance of spirituality in experiencing the disease, experts and international guidelines recommend that healthcare professionals ask patients about their beliefs [9, 10]. For their part, many patients want their physicians to ask them about their beliefs, especially if they are seriously ill [11, 12]. However, only between 10 and 30% of doctors routinely do so, whether because they lack the time, experience, and/or ease to speak about spiritual issues [13, 14].

Another challenge to integrating spirituality into clinical practice is that it is a very broad concept that encompasses ideas and practices in numerous domains, including coping and spiritual wellbeing, transcendence, faith, and religious engagement [15]. Spiritual factors have been correlated with better physical health [16], mental health [17], and lower mortality [18].

In addition to spirituality, other positive variables, such as optimism and social support, have drawn growing interest in recent years and have been associated with better health outcomes [19].

Dispositional optimism refers to the tendency to believe that good things will happen in the future and that bad things will rarely happen [20]. An optimistic perspective yields a variety of emotional, social, and health-related benefits [21, 22]. Optimism acts as a personal resource that maintains a positive mood and

puts a positive spin on adversity, gives more flexible coping style to face the impossibility of controlling stressful stimuli, and protects people from the possible negative effects of oncological treatment [23].

Social support can be defined as the perception that others are willing to and will help if the person needs it [24]. Social support appears to operate similarly to optimism and is a critical factor that lessens the negative psychological effect in individuals with cancer [19]. For them, a high degree of support, especially from their partner, is associated with suffering fewer psychological symptoms, and this support comprises a key environmental resource to foster spiritual coping and successfully adapting to life's vicissitudes [25].

AQ5

Numerous research works indicate that social support and optimism are mutually related [19, 25]; optimistic people appear to establish effective social networks more easily than those who are not optimistic [25], and social support may also promote individuals focus on the potential benefits and positive aspects [26].

While much research has been conducted regarding spirituality in subjects with advanced cancer or at the end of life, the factors that determine better coping in individuals with resected cancer with curative intent are less well-known. Thus, this study aims to analyze the difference in spiritual domains in people with non-advanced cancer based on sociodemographic and clinical variables, as well as other factors that can expound on spirituality, such as optimism and social support.

Method

Participants and procedures

The present study used a multi-center, prospective, and cross-sectional design. A consecutive sample of 912 cancer patients was recruited at 15 medical oncology departments of different hospitals in Spain, between July 2015 and July 2018. The eligible patients were ≥ 18 years who had undergone curative surgery for a stage I–III cancer and were to have a medical oncology consultation to receive adjuvant chemotherapy. Patients who had received neoadjuvant treatment were excluded. This research was conducted according to prevailing ethical principles and received previous approval from the Ethics Review Board at each institution and by the Spanish Agency of Medicines and Medical Devices (AEMPS). The study was based on the completion of various questionnaires and the data collection procedures were similar for all hospitals. Participation was voluntary, anonymous, and would not affect patient care. A total of 981 cancer patients were approached. Of these, 69 were excluded (18 because they failed to meet the

inclusion criteria; 30 met an exclusion criterion, and 21 with incomplete data). Data regarding participants' sociodemographic characteristics and clinical variables were obtained from the institutions where they received treatment. The questionnaires were used to measure spirituality, optimism, and social support, and were completed by patients at home in the month following cancer surgery and before starting adjuvant chemotherapy.

Measures

Spirituality Spirituality was measured using Functional Assessment of Chronic Illness-Spiritual Well-being Scale (FACIT-Sp), a 12-item validated instrument assessing two subdomains, which allows the components of Spiritual Well-Being (meaning/peace and faith) [27, 28]. Meaning/Peace (i.e., eight items assessing an individual's meaning in life and sense of purpose), and Faith (i.e., four items assessing an individual's religious/spiritual beliefs) on a five-point Likert-type scale. Cronbach's alpha for this study was 0.85.

Optimism Optimism was measured by the Life Orientation Test-Revised (LOT-R) which consists of six items plus fillers [29]. Each item is rated on a 4-point Likert scale that ranges from 1 = *I agree a lot* to 4 = *I disagree a lot*. Three of the items are framed positively, and three of the items are framed negatively. Cronbach's alpha for this study was 0.84.

Social support Social support measured using the Multidimensional Scale of Perceived Social Support (MSPSS) is a 12-item self-report tool that measures perceptions and adequacy of social support from 3 sources: family, friends, and significant others [30]. Items are scored on a 7-point Likert scale. High scores indicate greater perceived social support. In this study, Cronbach's alpha for the scale was 0.89.

Statistical analyses

Descriptive statistics are reported for demographic information. Independent *t* tests were performed to assess the differences in spirituality scales in function for sociodemographic and clinical characteristics. Pearson correlation coefficients were calculated for the relationship between spirituality, optimism, and social support scales. Two multiple linear regression models were then performed to examine the effects of optimism and social support scales on spirituality scales (meaning/peace and faith), adjusting for sociodemographic and clinical variables. To limit confounding bias, sociodemographic and clinical confounding factors were selected on the basis of theoretical criteria and the group's experience from previous studies. Those sociodemographic and clinical variables that were significantly related to spirituality scales in the univariate

analysis were introduced into the linear regression analysis as adjustment variables using the forward conditional method. The assumptions underlying regression analysis were controlled (e.g., linear relationship, multivariate normality, no or little multicollinearity, and homoscedasticity). For all analyses, a significance level of $\alpha < 0.05$ was used. Statistical analyses were performed with Statistical Package for Social Sciences (SPSS) software, 23.0 version (IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp).

Results

Sociodemographic and clinic characteristics and spirituality scales

A consecutive sample of 912 cancer patients was recruited out of 981 approached at 15 medical oncology departments of different hospitals in Spain, between July 2015 and July 2018. Sixty-nine were excluded, 18 because they failed to meet the inclusion criteria; 30 met an exclusion criterion, and 21 with incomplete data. More than half were female (60.5%), with a mean age of 58.9 years at study entry. The patients were married/living with partner (46.1%), had primary educative (53.4%), and were unemployed or retired (57.9%). The most common neoplasms were colon (42.1%) and breast (34.4%) cancer. Most patients had stage I–II (55.5%), and only 33.18% received radiotherapy in addition to adjuvant chemotherapy, see Table 1.

Table 1

Patient sociodemographic and clinical characteristics ($n = 912$)

AQ6

Characteristics	N (%)	Meaning/peace	Faith
Sex			
Men	360 (39.5)	24.3 (5.2)	7.9 (4.7)
Female	552 (60.5)	24.6 (5.2)	9.5 (4.6)
p value		0.355	*0.001*
Age			
≤ 65 years	576 (63.2)	24.4 (5.1)	8.5 (4.7)
> 65 years	336 (36.8)	24.5 (5.2)	9.6 (4.5)
p value		.907	*0.001*
Marital status			

Italicized values indicate significance at the 5% level

Characteristics	N (%)	Meaning/peace	Faith
Married/partnered	694 (76.1)	24.7 (4.9)	9.0 (4.6)
Not partnered	218 (23.9)	23.4 (5.9)	8.5 (4.8)
p value		*0.001*	0.223
Educational level			
Primary	487 (53.4)	24.3 (5.3)	9.1 (4.8)
High school or above	425 (46.6)	24.6 (5.1)	8.6 (4.5)
p value		0.382	0.148
Employed			
No	528 (57.9)	24.3 (5.2)	9.3 (4.7)
Yes	384 (42.1)	24.6 (5.1)	8.3 (4.5)
p value		0.416	*0.001*
Cancer type			
Colon	384 (42.1)	24.2 (5.3)	8.8 (4.8)
Breast	314 (34.4)	24.8 (5.0)	9.1 (4.6)
Others	214 (23.5)	24.2 (5.1)	8.9 (4.7)
p value		0.331	0.700
Stage			
I–II	504 (55.5)	24.6 (5.1)	8.9 (4.6)
III	404 (44.5)	24.1 (5.2)	8.8 (4.7)
p value		0.157	0.796
Surgery			
Partial	412 (45.1)	24.4 (5.1)	8.8 (4.6)
Complete	500 (54.9)	24.4 (5.2)	9.0 (4.7)
p value		0.913	0.536
Treatment			
Chemotherapy	604 (66.2)	24.2 (5.4)	8.6 (4.7)
Chemo and radiotherapy	308 (33.8)	24.7 (4.7)	9.4 (4.5)
p value		0.187	*0.030*
Italicized values indicate significance at the 5% level			

Univariate and multivariate analysis of the factors related to the subscales of spirituality

The results of the univariate analysis showed that significant differences were found for spirituality scales (meaning/peace, and faith) according to age (≤ 65 vs > 65), sex, marital status, employment, and cancer treatment. Patients married or partnered had significantly more meaning/peace scores compared to not partnered ($p = 0.001$). Women, > 65 years, those unemployed, and patients treated with chemotherapy and radiotherapy had significantly increased faith score compared to men, ≤ 65 years, employed and patients treated only with adjuvant chemotherapy (all $p < 0.030$).

The results of the correlation analysis indicated that meaning/peace, and faith factors were positively correlated with optimism and social support.

In meaning/peace, the linear regression analysis showed that the variation of optimism and social support ($\beta = 0.844$, $p = 0.001$; and $\beta = 0.169$, $p = 0.001$) explained 39.0% of the variance in meaning/peace scores ($F = 237.64$, $p < 0.001$). The optimism alone explained 31.0% of the variance in meaning/peace scores ($F = 334.76$, $p < 0.001$). No effect of sociodemographic characteristics was found in meaning/peace.

In faith, the linear regression analysis showed that the variation of optimism, social support, and sociodemographic and clinical variables (sex, age, and treatment) ($\beta = 0.637$, $p = 0.001$; $\beta = 0.059$, $p = 0.001$; $\beta = 1.264$, $p = 0.001$; $\beta = 0.073$, $p = 0.001$; and $\beta = 0.805$, $p = 0.017$) explained 24.0% of the variance in faith scores ($F = 46.977$, $p < 0.001$). Optimism and social support explained 19.3% ($F = 89.477$, $p < 0.001$) and optimism alone explained 18.1% of the variance in meaning/peace scores ($F = 165.12$, $p < 0.001$), see Table 2.

Table 2

Linear regression analysis to predict spirituality factors

Variables	Meaning/peace			Faith		
	β	t	*p*	*β*	t	*p*
Optimism	0.844	15.506	0.001	.637	11.166	0.001
Social support	0.169	9.867	0.001	.059	5.672	0.001
Sex	–	–	–	1.264	3.884	0.001
Age	–	–	–	0.073	3.350	0.001

These models included demographic and clinical variables selected from univariate analysis as covariates

Variables	Meaning/peace			Faith		
	β	t	*p*	*β*	t	*p*
Marital status	–	–	–	–	–	–
Employed	–	–	–	–	–	–
Treatment	–	–	–	0.805	2.382	0.017
These models included demographic and clinical variables selected from univariate analysis as covariates						

Discussion

In this series of patients with resected stage I–III cancer about to initiate adjuvant chemotherapy, we found that married individuals scored significantly higher on the meaning/peace versus unpartnered participants. Being female, over the age of 65 years, unemployed, and receiving chemo and radiotherapy exhibit higher scores on faith.

Cancer patients' spiritual wellbeing affects how they adjust to their illness and their quality of life; hence, it is important to know about the patient's spirituality and the factors that modulate it [31].

Earlier studies have reported that women with a lower educational status have fewer positive social interactions, emotional support, are more vulnerable to depressive symptoms, and are at higher psychosocial risk [32, 33]. Likewise, these studies have found that females, as in our series, tend to score higher than males on spirituality [27, 34]. The association between age and spirituality is less clear and consistent than the association with gender, but there appears to be a positive association between spirituality and older age [27, 35]. Previous data in the literature support that married and partnered people achieve better spirituality scores [34] and greater social support compared to unpartnered individuals. This is particularly relevant for women with breast cancer who fear the physical changes they suffer following surgery and that are aggravated with the adjuvant chemotherapy that can cause them to be dissatisfied with their body and negatively impact their romantic relationship [36]. To the best of our knowledge, there are no conclusive studies that relate employability and the type of adjuvant treatment with spirituality. Our outcomes indicate that unemployed patients and those receiving adjuvant chemo and radiotherapy exhibit a high level of spirituality, something for which there is no clear rationale and that calls for further study for confirmation.

Our results reveal that optimism and social support account for 39–19.3% of the variance of the spirituality domains and that sociodemographic and clinical aspects account for another 4.7% in faith. Prior studies, as well as this one, have associated optimism with meaning of life, spirituality, hope, subjective wellbeing, and resilience [19, 37]. Greater spirituality was associated with high levels of optimism in oncology patients [38, 39]. Moreover, the various degrees of optimism were linked to other coping strategies, such as fighting spirit, focusing on the positive, active acceptance, turning to religion, and social support, which improves wellbeing, psychosocial adjustment, and quality of life [40]. Spirituality can help to situate suffering on a transcendental plane and experience it as an opportunity for personal growth [41].

Social support appears to act along the same lines as optimism. Greater social support and greater optimism are associated with greater probability of maintaining stable-high spirituality and religiosity over time and lower probability of a stable-low course in cancer patients [42]. Likewise, social support has been correlated with better physical and mental status and with greater optimism in individuals with chronic illness [43]. The association we have found between spirituality and social support is consistent with earlier research that has revealed that social support is a key, beneficial component of spirituality in patients with cancer [43, 44]. Belonging to a religious community can contribute to a positive correlation with social support, just as seeking support from one's peers or participating in support groups can help patients to give meaning to their pain and suffering and focus it toward a more transcendent, personal growth dimension [41, 45].

Limitations

These outcomes must be contemplated within the context of the study's limitations. First, the cross-sectional design of the study precludes drawing conclusions regarding causality. In future studies, it would be interesting to ascertain what patients participate in support groups and the frequency with which these groups meet, so as to gain insight into the part they play in patients' wellbeing. Longitudinal designs are necessary to better understand the time pattern within which these constructs operate and the associations between spirituality, social support, and sociodemographic and clinical variables. In any event, we have established a relationship between them when the patient is beginning adjuvant chemotherapy. Secondly, the representation of different subgroups of populations and cancers may be a potential concern. Given that research shows that there are differences between males and females in the domains of spirituality [46], it would be useful to have a more equal proportion

of both sexes and among different breast and colon cancers, which are the most common and most widely represented in this sample.

Clinical implications and conclusions

Understanding that the variables of optimism, social support, age, sex, marital status, employment, and cancer treatment are related to spirituality can help healthcare professionals integrate spirituality into their clinical practice.

Spirituality can help patients to better cope with their cancer and manage treatment side effects [41, 47]. Spiritual therapy interventions, such as relaxation, meditation, control, and prayer therapy, may be effective in enhancing spiritual wellbeing and quality of life [48]. Other techniques that have been shown to be useful include reminiscence, life history, creative activities, meaningful rituals, and mindfulness. Likewise, psilocybin-assisted psychotherapy has the potential to reduce depression/anxiety symptoms in and increase life meaning and death acceptance in a safe and efficacious manner [49, 50]. All are valuable to provide life with meaning and transcendence, key aspects of the spiritual process of life [48].

As for healthcare providers, most acknowledge the potential benefits of spiritual care in oncology patients, but are rarely involved in such care [14, 51]. Many physicians choose to refer their patients to pastoral care or social work, or they believe that other members of the team address these concerns. The literature indicates that nursing staff is more likely to ask the patient about spiritual aspects than doctors [14, 51] and that professionals who describe themselves as religious are more inclined to ask than those who do not consider themselves to be religious [14]. Before providing spiritual care, more research is needed into what kind of spiritual care patients prefer, the timing of such care in the course of the disease, and who should offer it. This area requires further investigation.

Publisher’s note

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Authors' contributions

L.C.S., P.J.F., and C.C. developed the project, analyzed the data, and drafted the manuscript. The other authors recruited patients and provided clinical information, comments, and improvements to the manuscript. All authors participated in the interpretation and discussion of data, and the critical review of the manuscript.

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Data availability

The database is available through a centralized web platform: www.neocoping.es.

Compliance with ethical standards

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

Ethics approval The study was approved by the Research Ethics Committee of the Principality of Asturias (19 January 2015) and by the Spanish Agency of Medicines and Medical Devices (AEMPS) (number: L34LM-MM2GH-Y925U-RJDHQ).

Research involving human participants The study has been performed in accordance with the ethical standards of the 1964 Declaration of Helsinki and its later amendments. This study is an observational, non-interventionist trial.

Consent to participate and for publication Signed informed consent was obtained from all patients.

Consent for publication Informed consent and approval by the national competent authorities includes permission for publication and diffusion of the data.

Code availability Patients are identified by an encrypted code known only to the local researcher.

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