Spiritual/religious coping strategies and religiosity of patients living with cancer in palliative care

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ABSTRACT

Background: The palliative care provided to cancer patients should also contemplate the psychological and spiritual dimensions of care. Aims: This study aimed to compare religiosity and spiritual/religious coping (SRC) of cancer patients in palliative care with a group of healthy volunteers and determine whether sociodemographic characteristics affected this association. Methods: This was a case-control study conducted with 86 patients living with cancer from an outpatient palliative care clinic of the São Paulo State University (UNESP) medical school, Botucatu, Brazil and 86 healthy volunteers. The brief Spiritual/Religious Coping Scale (SRCOPE) and the Duke University Religion (DUREL) Index were used as a brief measure of 'religiosity'. Results: All 172 participants reported to be religious and, overall, made very little use of SRC strategies. DUREL scores were negatively associated with religious practice ($P<0.01$) and positive SRC ($P<0.01$). Age was associated with non-organisational religious activities and intrinsic religiosity ($P<0.01$); and income was associated with intrinsic religiosity ($P<0.04$). Positive SRC was negatively associated with the palliative group ($P=0.03$) and DUREL index ($P<0.01$). Negative SRC was positively associated with the palliative group ($P=0.04$) and negatively associated with education level ($P=0.03$) and practice of religion ($P<0.01$). Conclusion: All participants reported to be religious; however, their use of SRC strategies was very low. Positive religious coping was the most prevalent score. Negative religious coping was more common in the palliative care group compared to healthy volunteers. There is an association between religious coping and religiosity in palliative cancer care patients.

Keywords: Palliative care; Cancer; Nursing; Religiosity; Spirituality

INTRODUCTION

According to the World Health Organization (WHO), the assistance of patients in palliative care should also consider the psychological and spiritual dimensions of care (WHO, [s.d.]). Patients with advanced cancer, especially those terminally ill, present a multiplicity of symptoms, functional needs and limitations that are not limited to physical aspects. When patients confront the reality that their cancer treatment is no longer effective, spirituality and religion emerge as mechanisms to deal with the disease and positively impact on their quality of life (Bai and Lazenby 2015).

Religion and spirituality, despite being distinct, are intimately connected and may cause suffering in cancer patients, because they may affect their disease experience in various ways (C. Puchalski et al. 2009; Thuné-Boyle et al. 2013). Spirituality is considered the dynamic and intrinsic aspect of mankind, through which people seek the ultimate meaning, the purpose, the transcendence and the experience in relation to themselves, family and others (C. M. Puchalski et al. 2014), whereas religiosity is the expression of spirituality itself through rituals, dogmas and doctrines (Park et al. 2017; Richardson 2014). In this context, spiritual/religious coping (SRC) refers to the various cognitive strategies used by individuals to cope with adverse situations within the perspective of religion/spirituality. This way, its investigation should be broader and based on a functional view of religion and the role it plays in coping with adversity (K. Pargament, Feuille, e Burdzy 2011).

Although the concept of religious coping has a positive connotation, it can be both positive and negative, as well as its strategies. Positive coping covers measures that provide beneficial effect to the individual. Negative coping is related to measures that cause harmful consequences to individuals, such as questioning their own existence, delegating to God the resolution of problems, defining the condition of stress as a punishment from God, among others (K. Pargament, Feuille,

e Burdzy 2011; Mesquita et al. 2013). Therefore, the adaptive strategies are considered positive, whereas others are maladaptive or negative (Panzini e Bandeira 2005).

Despite the relevance of this topic, spiritual/religious support is not always an additional tool incorporated into the care practice by health professionals. The literature has shown that religion and religious support offered can positively or negatively impact decisions about the end-of-life care (Balboni et al. 2013).

The scientific evidence on the relationship between spiritual/religious coping strategies and religiosity remains poorly explored, which contributes greatly to the conflicting findings in this research area. Therefore, the present study aimed to answer the following questions: 1) Is there a relationship between spiritual/religious coping and religiosity in cancer patients in palliative care compared to healthy volunteers? 2) Is there a difference between spiritual/religious coping and religiosity according to clinical and sociodemographic characteristics? 3) Have spiritual/religious coping and religiosity being used by these patients?

This study aimed to compare religiosity and spiritual/religious coping (SRC) of cancer patients in palliative care with a group of healthy volunteers and whether sociodemographic characteristics affected this association.

METHODS

This was an exploratory case-control study, with a quantitative approach, conducted with 86 cancer patients from an outpatient palliative care clinic of the São Paulo State University (UNESP) medical school, Botucatu, Brazil, from 1st of March 2015 to the 29th February 2016. To test the hypotheses of the study, the participants were divided into two groups: Group A (cases), consisting of patients in palliative care, and Group B (controls), consisting of healthy volunteers.

The control group consisted of randomly selected healthy parents of students from the nursing undergraduate course at the Botucatu Medical School and have fulfilled the inclusion criteria. Parents with chronic, mental, degenerative and progressive diseases were excluded. The patients of the palliative cancer care group were included consecutively. The groups were paired using the mean age of patients in Group A as criteria, in the proportion of 1:1.

Patients of both sexes were considered eligible for the study when meeting the following inclusion criteria: aged 18 and older; in outpatient care; with good self-reported emotional status and capable to answer the questionnaire and provide written informed consent to participate in the study. Patients who did not complete the questionnaire were excluded.

Spiritual/religious coping assessment

The Spiritual/Religious Coping Scale (SRCOPE), is a North American instrument with 92 items, originally called RCOPE (K. I. Pargament, Koenig, e Perez 2000), whose brief version was validated for the Brazilian population (Panzini e Bandeira 2005). The Brief SRCOPE contains 49 items divided into two large dimensions: Positive spiritual/religious coping (transformation of the self-and/or of life; actions in search of spiritual help; offer of help to others; positive position before God; actions in search of the institutional other; personal search for spiritual knowledge; religion and/or spiritualities) and negative spiritual/religious coping (negative revaluation of God; negative position before God; negative revaluation of the meaning; dissatisfaction with the institutional other). The answers range from 1 to 5 points on a Likert scale, in which 1.0 to 1.5 means none or extremely low; 1.51 to 2.50, low; 2.51 to 3.50, average; 3.51 to 4.50, high; and 4.51 to 5.0, very high (Panzini e Bandeira 2005), for overall, positive and negative coping.

Religiosity assessment

The Duke University Religiosity Index, whose version was translated and validated for the Portuguese language (P-DUREL) (Moreira-Almeida et al. 2008; Taunay et al. 2012), is a five-item scale, which measures three of the main dimensions of religiosity: Organizational religious activity (ORA, item 1) refers to the participation and frequency of religious encounters, such as masses, cults and prayer groups; Non-organizational religious activity (NORA, item 2) relates to the frequency of private religious activities such as prayers, meditations, reading of religious texts and others; and, finally, the Intrinsic religiosity (IR, items 3 to 5) refers to the search for internalization and full experience of religiosity as the individual's main objective and assesses the extent that religion can motivate or influence the subject's behaviors and decisions. The three domains should be analyzed separately to calculate the score of the instrument, and the measurement of the IR dimension should be the sum of the scores obtained in items 3, 4 and 5, whose maximum score is 15 (Koenig e Büssing 2010).

Sociodemographic characteristics

The following variables were included: age, sex, schooling years, household monthly income, marital status, type of religion and practicing religion status.

Each participant answered the questionnaire in a private room, individually. They were informed that their potential refusal to participate in the study would not influence the continuity of care.

Initially, all variables were analyzed descriptively. The proportions between groups were compared by Pearson's chi-square test or by chi-square test for trend, and quantitative data were compared by the Mann-Whitney test. The latter was used to compare the medians of the Brief SRCOPE and the DUREL scores between groups. The variation of the Brief SRCOPE and the DUREL was evaluated against clinical, demographic and SRC variables by generalized linear model (gamma probability distributions, identity function, robust covariance matrix). The multiple

correspondence analysis generated a two-dimensional perceptual map with the variables that presented factorial load >0.2. All analyses were carried out using the IBM SPSS program, version 25. The significance level adopted was 0.05.

Considering that the indicators of SRC and DUREL index are poorly known in this population, for an effect size of 20% and reliability of 95%, the minimum sample size was estimated to be 86 individuals in each group. The sample size was *a priori* estimated based on Freeman formula for multiple regression, resulting in 86 patients for eight covariates in the model in each group (Mitchell H. Katz 2011). A *post hoc* sensitivity analysis (G*Power v.3.1.9.2) from the final generalized linear model resulted in beta>0.25 and alpha (p-value) <0.05; justifying the suitability of the sample size.

The statistical analyses were performed using SPSS version 25® software (mIRT package). The research project was approved by the Ethics Committee of the São Paulo State University (UNESP) medical school (protocol nº 969503). Each eligible participant provided a written informed consent.

RESULTS

Based on the inclusion criteria, 172 individuals were selected and participated in the study. They were divided into two groups with 86 participants in each group. Table 1 shows the study participants' characteristics by palliative cancer care (PC) and control group. Women living with a partner and who practiced their religion were prevalent in both groups. However, participants of the PC group were older and had lower education level and household monthly income. Among the types of neoplasms in the PC group, breast cancer was the most prevalent type (n = 31; 36%), followed by gastrointestinal cancer (n = 17; 19.7%), male reproductive cancer (n = 10; 11.6%),

tumors of the lymphoid tissues (n = 10; 11.6%) and 21.1% corresponded to neoplasms of other nature.

Table 1. Sociodemographic characteristics of the study participants.

Variables	PC	CTRL	p-value
Age (years)[a]	58 (12)	43 (14)	**<0.01**
Sex [b]			
Male	35 (41)	31 (36)	0.53
Female	51 (59)	55 (64)	
Marital status [b]			
With a partner	55 (64)	64 (74)	0.14
Without a partner	31 (36)	22 (26)	
Religion [b]			
Catholic	60 (70)	60 (70)	1.00
Non-Catholic	26 (30)	26 (30)	
Practicing religion [b]			
Yes	71 (83)	55 (64)	**0.01**
No	15 (17)	31 (36)	
Education level [b]			
Primary school	52 (61)	20(23)	**<0.01**
High school	26 (30)	31 (36)	
Higher education	8 (9)	35 (41)	
Household income (minimum wages*) [b]			
Less than one	3 (4)	3 (4)	**<0.01**
From 1 to 3	56 (65)	39 (45)	
From 4 to 10	26 (30)	36 (42)	
More than 10	1 (1)	8 (9)	

PC: palliative cancer care group; CTRL: control group; [a] mean (sd); [b] n (%); *1 minimum wage = USD 200.

Table 2 shows the medians (25-75 percentile) of the Brief SRCOPE scale and the DUREL index. Both groups presented a similar mean use of positive SRC. However, a significant difference was observed for negative coping, showing that its use was higher in the PC group.

Table 2. Distribution of the median (25-75 percentile) of the Brief SRCOPE scale and the DUREL index with its domains by group (n=172).

	PC		CTRL		p-value
Brief SRCOPE scale	**Median**	**25-75p**	**Median**	**25-75p**	
Positive	2.7	2.4-3.2	2.9	2.2-3.3	0.97

Negative	1.5	1.3-1.7	1.4	1.2-1.6	**<0.01**
Total	2.3	2.1-2.6	2.3	1.9-2.6	0.44
DUREL index					
Organizational	3.0	2.0-4.0	3.0	2.0-4.0	0.132
Non-organizational	2.0	2.0-2.0	2.0	2.0-3.0	**<0.01**
Intrinsic	4.0	3.0-5.0	4.0	3.0-6.0	0.47

PC: palliative care group; CTRL: control group.

With regards to the DUREL index, a significant difference between groups was observed for the non-organizational religious activity being more common in participants from the control group. Although intrinsic religiosity presented a lower score, considering that it refers to the sum of the last three questions of the instrument (median=4.0), the response was positive and corroborates its use by participants.

Table 3 shows the results from the multiple linear regression analysis performed between the scores of the DUREL index domains and sociodemographic variables, religious practice, positive and negative SRC. The ORA was higher among participants who did not practice religion ($p<0.01$), but it was negatively associated with positive coping scores ($p<0.01$). NORA was higher among participants of lower age groups ($p<0.01$) and among those who were not religious ($p<0.01$); however, it was negatively associated with positive coping scores ($p<0.01$). The PC group showed marginal significance for lower NORA scores ($p=0.07$). IR was higher among participants that belonged to lower age groups ($p=0.03$), were Catholics ($p=0.05$), had higher income ($p=0.04$), and did not practice religion ($p<0.01$), but it was negatively associated with positive coping scores ($p<0.01$).

Table 3. β coefficients of the generalized linear model between the DUREL index and sociodemographic variables, religious practice and positive and negative SRC by domain (n=172).

	ORA*		**NORA****		**IR*****	
	β	**p**	**β**	**p**	**β**	**p**
Group *(ref. palliative care)*	-0.2	0.94	-0.27	0.07	0.11	0.61
Age	-0.01	0.14	-0.01	**0.01**	-0.02	**0.03**
Sex *(ref. male)*	0.00	0.93	0.20	0.16	0.12	0.96
Education level *(ref. primary)*	-0.22	0.64	-0.08	0.66	0.13	0.97
Marital status *(ref. living with a partner*)	0.26	0.31	0.07	0.66	0.24	0.26
Practicing religion *(ref. yes*)	-1.63	**<0.01**	-1.06	**<0.01**	-1.35	**<0.01**
Household monthly income *(ref.<1 minimum wage [a])*	0.76	0.33	-0.77	0.31	1.20	**0.04**
Catholic religion	0.15	0.48	0.23	0.06	0.39	**0.05**
Positive SRC[§]	-0.57	**<0.01**	-0.52	**<0.01**	-1.02	**<0.01**
Negative SRC	0.26	0.38	-0.16	0.42	-0.10	0.76

*ORA: Organizational religious activity; **NORA: Non-organizational religious activity; ***IR: Intrinsic Religiosity; mw: minimum wage; [§]SRC: Spiritual Religious Coping. [a]1 minimum wage = USD 200.

Table 4 shows the multiple linear regression analysis of positive, negative and total SRC. Positive SRC was lower among patients in palliative care (p=0.03) and was negatively associated with religiosity scores (ORA, p=004; NORA and IR, p<0.01), with marginal significance for groups with higher income (p=0.09) and schooling level (p=0.08). Negative SRC was higher in the PC group (p=0.04), as well as in subjects with higher educational level (p=0.03) and in those who did not practice religion (p<0.01). However, there was a marginally significant positive association

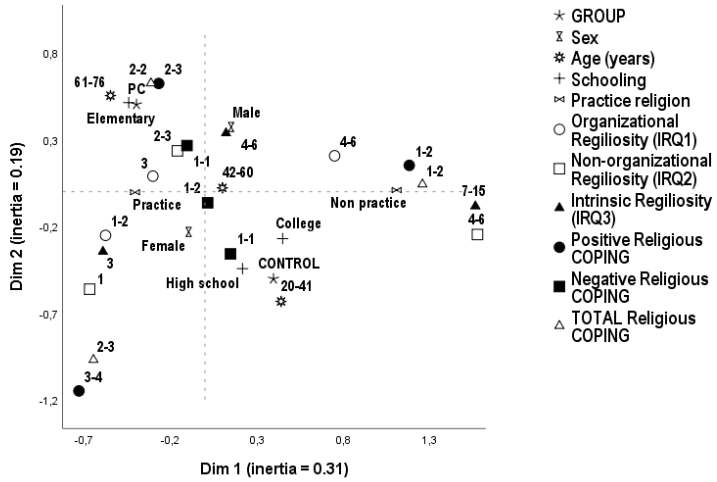
with NORA (p=0.08). Total coping showed higher scores among women (p=0.05) and participants with higher educational level (p=0.04) and higher income (p=0.04). However, it was negatively associated with religiosity domains (ORA, p=0.03; NORA and IR, p<0.01).

Table 4. β coefficients of the generalized linear model between the Brief SRC, sociodemographic variables, religious practice and the DUREL index scores by domain (n=172).

	Brief SRC * positive		Brief SRC negative		Brief SRC total	
	β	**p**	**β**	**p**	**β**	**p**
Grupo (*ref. palliative care)*	-0,20	**0,03**	0,13	**0,04**	-0,09	0,18
Sex (*ref. male*)	-0,15	0,07	-0,02	0,62	-0,11	**0,05**
Age	0,00	0,68	0,00	0,58	0,00	0,86
Education level (*ref. primary*)	-0,22	0,08	-0,14	**0,03**	-0,18	**0,04**
Marital status (*ref. living with a partner*)	0,04	0,64	0,04	0,48	0,04	0,45
Household monthly income (*ref <1minimum wage* [a])	-0,37	0,09	-0,19	0,18	-0,29	**0,04**
Practice religion (*ref. yes*)	0,02	0,85	-0,18	**<0,01**	-0,06	0,37
Catholic	-0,04	0,63	-0,05	0,35	0,03	0,53
ORA	-0,07	**0,04**	0,00	0,85	-0,05	**0,03**
NORA	-0,11	**<0,01**	-0,03	0,08	-0,09	**<0,01**
IR	-0,08	**<0,01**	0,00	0,92	-0,05	**<0,01**

*Brief SRC: Brief Spiritual Religious Coping; [a]1 minimum wage = USD 200.

Figure 1 describes the correspondence between the scores for positive and negative SRC and the DUREL index in groups A and B, with some explanatory variables. Patients in palliative cancer care were older, had lower educational level, and used more negative SRC.



DISCUSSION

This is the first case-control study, to the best of our knowledge, to compare religiosity and spiritual/religious coping of cancer patients in palliative care with a group of healthy volunteers and whether sociodemographic characteristics affected this association. Our main findings showed that there is an association between religious coping and religiosity in palliative cancer care patients. Household monthly income and practicing religion were the only sociodemographic characteristics common to both religious coping and religiosity. Overall, there was a low use of spiritual/religious coping and positive coping was more prevalent. However, when comparing the groups, negative religious coping was more used by patients in palliative care.

Although religion is an important aspect of spirituality, the individual can be spiritual without being religious (Delgado-Guay 2014). This distinction is important not only to understand the motivation behind our study, but also for the development of future nursing interventions that may follow the findings from this study.

A study published in 2018 with 747 cancer patients from various religions in the United States showed that 79% of participants reported at least one spiritual need. However, patients who reported being spiritual but not religious, and who represented 59% of the sample, had significantly more spiritual needs (Astrow et al. 2018). Another study conducted in South Korea with patients in palliative care showed that spiritual well-being was significantly higher in patients with religious affiliation when compared with those who had no religion (Yoon et al. 2018).

In the present investigation, both groups i.e. palliative care and healthy volunteers reported religious practicing and despite the DURAL index scores being practically similar in both groups, a statistically similar difference was observed in relation to non-organizational religious activities. The frequency dedicated by participants in the control group to this individual religious activity was higher than in palliative care.

Although the intrinsic religiosity score was low in the present study, this finding does not mean that our participants did not practice it. This is because the score of this domain is obtained by the sum of the last three questions of the DUREL religiosity index and the first items of these multiple-choice questions are affirmative. This explanation led us to believe that our participants had intrinsic religiosity. Intrinsic religiosity refers to the search for internalization and full experience of religiosity as the main objective in one's life. It is directly related to motivation level and personal religious commitment (Koenig & Büssing, 2010).

Religion is known to play an important role in many people's lives, especially in older adults. It is considered an opportunity for personal growth and they understand it within the great and mysterious benevolent plan when experiencing stressful situations, (Krause e David Hayward 2012). The literature has shown that religiosity is positively related to cognitive and emotional

processes well-being in cancer patients (Krok, Brudek, e Steuden 2019). In most cases, individuals rely on a belief system and practices that influence how they perceive and cope with adverse circumstances throughout life. In this context, religiosity influences positive and negative coping mechanisms in three ways: being part of it, contributing to it or even being the result of it. However, it is important to highlight that, depending on how this coping mechanism is used, it can either facilitate or hinder the development of a healthy mental state (Krok, Brudek, and Steuden 2019).

In the present study, the use of spiritual/religious coping strategies was low, and the positive use of religious coping prevailed. However, when comparing the two groups investigated, negative religious coping was more used by patients in palliative care. As expected, there was a low use of negative religious coping reported by the healthy volunteers due to their lack of physical and mental stressors associated to cancer.

A longitudinal study conducted with women with breast cancer showed that negative coping was a predictor for worsening mental state, increasing depressive symptoms and decreasing life satisfaction (Hebert et al. 2009). Another study conducted in Poland with 215 gastrointestinal cancer patients found that religious factors, such as religiosity and coping, and non-religious factors i.e. evaluation of the disease, can act together and influence the well-being of cancer patients (Krok, Brudek, e Steuden 2019).

With regards to the second objective of this study, a multiple linear regression analysis of the DUREL index was performed with some explanatory variables. Positive spiritual/religious coping was negatively associated with the religiosity index in our sample.

According to Wong-McDonald and Gorsuch (2000) religious coping describes how individuals use their faith that includes religion, spirituality or personal beliefs to deal with stressful circumstances and various problems in their lives. This aspect could potentially explain our

Commented [u1]: Pargament K. I. (1997). The psychology of religion and coping: theory, research, practice. New York, NY. Guilford Press.

Commented [CO2]: Wong-McDonald, A.; Gorsuch, R.L. - Surrender to God: an additional coping style? *J Psychol Theol* 28(2):149-161, 2000.

findings since positive religious coping strategies are independent from the individual's religiosity and they can potentially help in the process of recognizing and accepting losses, reviewing values and goals, and even adapting to the disease (Krok, Brudek, e Steuden 2019).

However, a negative association was found between positive religious coping in the palliative care group, showing that these participants used less of this coping strategy. Although this was not a result found in other studies addressing the same topic (Park, Waddington, e Abraham 2018; Lin et al. 2018), it can be inferred that cancer makes the individual reflect on the meaning of life and the nature of existential suffering, as shown in a qualitative research conducted with cancer patients who had an estimated survival prognosis of less than 12 months (Maiko et al. 2019). On the other hand, negative religious coping was positively associated with the group of patients in palliative care. A fact that can be attributed to the moment in their life and the health condition experienced by the participants with cancer. A study conducted with 48 cancer survivors showed that negative spiritual/religious coping was associated with great suffering and worse post-traumatic coping (Trevino et al. 2012). In another study conducted with 200 cancer patients with anxiety and depression, the patients used negative religious coping more (Ng et al. 2017).

However, we must consider that spiritual suffering is frequent in patients with advanced diseases and is associated with poorer quality of life and despair when facing end of life (Selman et al. 2012; Balboni et al. 2007). This explanation could help explaining the negative association found in our study between religious practice and negative spiritual/religious coping.

Religiosity (intrinsic, organizational and non-organizational) was negatively associated with practicing religion and positive spiritual/religious coping, showing that those who practiced more religion used less of this coping strategy. It is likely that individuals find in religious belief the bulwark necessary to face suffering and adversities against the terminality process.

Our investigation has some limitations that should be acknowledged. Its cross-sectional design is a limitation. Because data collection occurred only at one point in time, it may not be sufficient to reflect the magnitude of needs of cancer patients during the entire phase of palliative care and the associated spiritual/religious support needed. It is also important to mention the scarcity of studies using the DUREL index and spiritual/religious coping. In addition, the use of different methodologies with contradicting results made comparisons between our findings with other studies difficult.

CONCLUSIONS

The main findings of this study showed that there is an association between religious coping and religiosity in palliative cancer care patients. With regards to the effect the sociodemographic variables investigated, it was observed only a small difference between religious coping and religiosity. Household monthly income and practicing religion were the only variables common to both religious coping and religiosity. Overall, there was a low use of spiritual/religious coping and positive coping was more prevalent. However, when comparing the groups, negative religious coping was more used by patients in palliative care.

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