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Does spirituality reduce the impact of somatic symptoms on distress in cancer patients? Cross-sectional and longitudinal findings

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ABSTRACT

Rationale: When diagnosed with cancer, a patient has to cope with stressors such as pain, fatigue, and the experience of life-threat that can cause great distress. Spirituality may be a resource for coping with these problems, thereby reducing distress.
Objective: Two questionnaire studies—the first a cross-sectional (Study 1; $N = 216$) and the second a one-year longitudinal (Study 2; $N = 383$)—investigated among Dutch cancer patients whether spirituality lessens the impact of pain, fatigue, and perceived life-threat on distress.
Method: Data for Study 1 were gathered in 2006–2007 and for Study 2 in 2009–2010. Spirituality was measured with the Spiritual Attitude and Involvement List, which assesses six distinct but related aspects of spirituality. Linear regression analysis and marginal effect plots were applied.
Results: Limited evidence appeared for the hypothesis that spirituality reduces the impact of pain, fatigue, or perceived life threat on distress. Meaningfulness and acceptance might reduce a negative impact of increases in fatigue during the first year after the start of cancer treatment. In contrast, spirituality might enhance a negative impact of increases in perceived life threat.
Conclusions: Processes of appraisal might explain the findings. Experiences of meaningfulness and acceptance might help to reappraise fatigue in a less threatening way, thereby reducing distress. Conversely, appraising the cancer as life-threatening might conflict with spiritual experiences of meaning, acceptance, and awe about life. Future studies should focus on the processes by which the various aspects of spirituality influence the adjustment of cancer patients and use other outcome variables than non-specific distress. Such studies may provide further clues as to how the spirituality of patients can be harnessed to help them adjust to a serious life event such as the occurrence of cancer.

1. Introduction

Fatigue and pain are frequently reported symptoms in cancer and have a great effect on emotional functioning (Arndt et al., 2006; Henselmans et al., 2010; Kim et al., 2008; Vahdaninia et al., 2010). In addition, how threatening a patient perceives the cancer to be is (positively) associated with distress (Laubmeier et al., 2004; Lynch et al., 2008; Wootten et al., 2007). Spirituality can play an important role in coping with these experiences, thereby buffering their impact on distress. Spirituality can be defined as "one's striving for and experience of connectedness with the essence of life" (Jager Meezenbroek et al., 2012, p. 142). It expresses itself in various experiences, attitudes, and activities, such as experiences of meaning, attitudes of compassion, or contemplative practices. Spirituality can be expressed and experienced through religion, although not necessarily.

James and Wells (2003) suggest two mechanisms by which religion or spirituality may buffer the effect of negative experiences on mental health: appraisal and self-regulation of thoughts and attention. These authors indicate that religion or spirituality provides a "generic mental model" (p. 365) that guides the appraisal of the situation. If the schema helps to understand the situation, religion or spirituality will be positively associated with mental health. However, if it does not help find meaning, then religion or spirituality will be negatively associated with mental health, and religious or spiritual struggles may arise. Park's (2010) more recent meaning-making coping model elaborates on this idea.

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James and Wells also suggest that the practices (for example, prayer, yoga, and meditation) and the social support offered by religion or spirituality can help patients to self-regulate their thoughts and attention because they help to take their minds off the experience while simultaneously inducing a relaxation response. Aldwin et al. (2014) discuss several studies that support this hypothesis by showing that social support and meditation are associated with lower blood pressure and better immune functioning, indicating more relaxation. In several qualitative studies, cancer patients reported that their religious and spiritual beliefs helped them to make sense of their situation (appraisal) and to take their mind off their worries (self-regulation), but they felt that the process of finding meaning could be a difficult and distressing process (Garssen et al., 2015a; Logan et al., 2006; Molzahn et al., 2012; Thomas and Retsas, 1999; Tuls Halstead and Hull, 2001). Coyle and Atkinson (2018) also discuss how a (temporary) lack of meaning, or a sense of hopelessness, can actually be an important process for patients that should not be negated.

Garssen et al's. (2015a) recent systematic review found 25 studies evaluating the buffering effect of spirituality. Only six studies included people with a physical illness, and none included cancer patients. The review showed that 14 of the 25 studies (56%) found a buffering role of spirituality in the relationship between negative conditions and emotional well-being or distress. This effect was found somewhat more often if the participants had physical health problems (present in 67% of the studies) compared to population samples or students (57% and 40%, respectively). Spirituality was assessed in these studies as using prayer for help, religious salience/importance, church attendance, and a sense of peace and meaning.

Besides knowing whether spirituality plays a moderating role, it is also important to understand the timeframe in which this takes place. In the review of Garssen et al. (2015b) an effect was found among 60% (9 of 15) of the cross-sectional studies and among 50% (6 of 12) of the longitudinal studies. Two studies investigated both effects and obtained contradictory findings: Krause (2007) found a cross-sectional buffering effect of meaning in life on the relationship between stressful life events and depression; yet, this effect was not present when evaluated as a 3-year longitudinal association. In contrast, Wink et al. (2005) found both a cross-sectional effect and a 15-year longitudinal buffering effect of religiousness on the relationship between physical health and depression.

The studies discussed above suggest that spirituality potentially reduces the impact of the cancer-related stressors fatigue, pain, and perceived life threat on distress through processes of appraisal and self-regulation; yet, this possibility has never been investigated. It is also currently unclear what the timeframe of any such buffering effect of spirituality might be. Therefore, we examined on both a cross-sectional and longitudinal basis, whether several distinct aspects of spirituality reduce the impact of pain, fatigue, and the experience of life-threat in cancer patients. Six aspects of spirituality were distinguished that relate to the two pathways proposed by James and Wells (2003): *Meaningfulness*, *Acceptance*, and *Caring for Others* form general attitudes toward life that might guide situational appraisals; *Connectedness with Nature*, *Transcendent Experiences*, and *Spiritual Activities* reflect practices and experiences that might have a self-regulatory effect (the following section expands on these aspects).

2. Method

2.1. Study 1

In this study, the moderating role of various aspects of spirituality on the relationship of pain and fatigue with distress was investigated in a cross-sectional design.

Participants. Participants were recruited at seven Dutch hospitals located close to or in the city of Utrecht. Inclusion criteria were being 18 years of age or older, being Dutch-speaking, and having been diagnosed with cancer more than two months before assessment. Researchers approached a total of 415 patients who were eligible for inclusion. Of these, 219 patients agreed to participate (response rate: 53%). Three of these patients were removed due to missing data. The final sample consisted of 216 patients. Each patient's physician noted whether the patient was treated with curative or palliative intent. From these assessments, it was found that 152 participants were treated with curative intent, and 64 participants were treated with palliative intent. The socio-demographic and medical characteristics of the participants appear in Table 1.

Table 1
Demographic and medical characteristics of the cancer patients.

	Study 1 (N = 216)	Study 2 (N = 444)
Mean age in years (*SD*)	59 (12.1)	59 (10.6)
Range	25–86	24–83
Gender (% female)	78	73
Having a partner (% yes)	81	80
Education (%)		
Primary school	12	4
Lower vocational education	20	15
High school	8	12
Secondary vocational education	13	29
University of applied sciences	38	28
University	9	12
Member of religious community (% yes)	68	62
Religious person? (%)		
Yes	54	53
No	41	42
Unsure	5	5
Spiritual person? (%)		
Yes	53	50
No	36	42
Unsure	11	8
Type of cancer (%)		
Breast	62	62
Colorectal	14	18
Lymph nodes	6	–
Gynecological	5	3
Lung	4	2
Prostate	3	12
Other	6	3
Mean time since diagnosis in months (*SD*)	30 (40)	3 (2.6)

2.2. Questionnaires

Fatigue. Fatigue was measured with the Dutch 4-item version of the Checklist Individual Strength (Alberts et al., 1997). Participants were asked to rate whether they felt tired, were easily tired, felt well, and felt physically exhausted on a 7-point scale ranging from “Yes, that is true” to “No, that is not true.” The item “I feel well” was reverse scored. Norm data for this scale are available on several healthy and patient populations, including cancer patients (Alberts et al., 1997). This shortened version is closely related to the often used, valid, and reliable longer version of the Checklist Individual Strength (CIS; Vercoulen et al., 1994).

Pain. Pain was assessed with a visual analogue scale ranging from 1 “no pain at all” to 7 “the worst pain imaginable.”

Spirituality. The Spiritual Attitude and Involvement List (SAIL) was used to measure spirituality (Jager Meezenbroek et al., 2012). The SAIL consists of seven distinctive subscales; however, the subscale Trust was not used because it has questionable construct validity (Visser et al., 2017). The items of the subscales *Meaningfulness*, *Acceptance*, *Caring for Others*, and *Connectedness with Nature* were rated on a 6-point scale ranging from 1 “not at all” to 6 “to a very high degree.” The subscales *Transcendent Experiences* and *Spiritual Activities* were rated from 1 “never” to 6 “very often.” Mean scores were calculated for all subscales, with higher scores representing more spiritual involvement.