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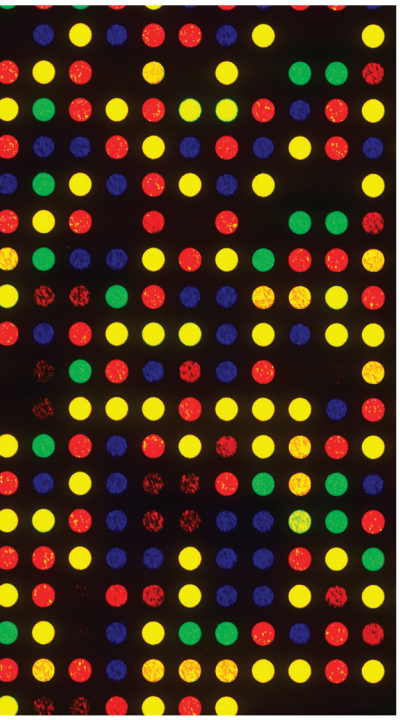
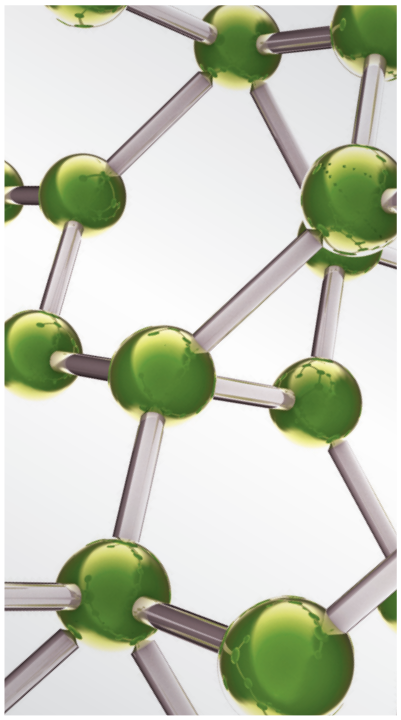
Spirituality and Health

Guest Editors: Arndt Büssing, Klaus Baumann, Niels Christian Hvidt, Harold G. Koenig, Christina M. Puchalski, and John Swinton



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Editorial Board

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Editorial

Spirituality and Health

Arndt Büssing,[1,2] Klaus Baumann,[2,3] Niels Christian Hvidt,[2,4,5] Harold G. Koenig,[6,7] Christina M. Puchalski,[8] and John Swinton[9]

[1] *Quality of Life, Spirituality and Coping, Institute of Integrative Medicine, Witten/Herdecke University, 58313 Herdecke, Germany*
[2] *Freiburg Institute for Advanced Studies (FRIAS), Albert Ludwigs University of Freiburg, 79104 Freiburg, Germany*
[3] *Caritas Sciences and Christian Social Work, Faculty of Theology, Albert Ludwigs University Freiburg, 79098 Freiburg, Germany*
[4] *Research Unit of Health, Man and Society, Institute of Public Health, Southern Denmark University, 5000 Odense, Denmark*
[5] *Palliative Care, Ludwig Maximilian University of Munich, 81377 Munich, Germany*
[6] *Psychiatry & Behavioral Sciences, Duke University, Durham, NC 27710, USA*
[7] *Medicine, King Abdulaziz University, 22254 Jeddah, Saudi Arabia*
[8] *Medicine and Health Sciences, George Washington Institute for Spirituality & Health, George Washington University School of Medicine & Health Sciences, Washington, DC 20036, USA*
[9] *Practical Theology & Pastoral Care, School of Divinity, History & Philosophy, King's College University of Aberdeen, Aberdeen AB24 3UB, UK*

Correspondence should be addressed to Arndt Büssing; arndt.buessing@uni-wh.de

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Research in the field of mind-body medicine focuses on the complex interaction of psychoemotional, social, spiritual, experiential, and behavioral elements and their impact on health and the handling of disease. Specific approaches intend to investigate and promote patients' own abilities and resources to manage their respective stressors, that is, coping strategies, relaxation techniques, mindfulness meditation, yoga, rituals, prayer, spirituality, and religiosity. An increasing number of published studies have examined the connection between spirituality/religiosity, health, and quality of life. However, the impact of a person's religiosity/spirituality on health is multifaceted and is fraught with methodological controversy since one has to deal with cognitive approaches (specific attitudes and beliefs), emotions, practices (spiritual/religious and secular forms), specific behaviors, reactive strategies to deal with illness (coping), and spirituality/religiosity-based interventions (i.e., meditation, mindfulness, and prayer). Because of this complexity, an interdisciplinary perspective is required for research as well as clinical care.

We would broadly define spirituality as all attempts to find meaning, purpose, and hope in relation to the sacred or significant (which may have a secular, religious, philosophical, humanist, or personal dimension). In particular, spirituality and spiritual practices have commitment to values, beliefs, practices, or philosophies which may have an impact on patients' cognition, emotion, and behavior. Thus, personal spirituality in this sense may influence patients' sense of coherence and their ability to cope with stress, loss, and illness. Spirituality can also have an influence on patients' health behaviors and healthcare decision making, and it can be critically enabling people to reframe their situation. Spirituality can also affect how people relate to meaningful others (i.e., friends, family, and health professionals) who may be significant in their lives. Spirituality can also include people's understanding of the role and importance of transcendence in their lives; however, they may define the term.

This special issue enlisted experts from different disciplines to contribute to new research on the growing body of evidence that spirituality/religiosity impacts health

and illness. However, we are aware of the fact that many questions still remain unaddressed and encourage future research.

Arndt Büssing
Klaus Baumann
Niels Christian Hvidt
Harold G. Koenig
Christina M. Puchalski
John Swinton

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Research Article

Spiritual Well-Being and Quality of Life of Iranian Adults with Type 2 Diabetes

Najmeh Jafari,[1,2] Ziba Farajzadegan,[2] Amir Loghmani,[2] Mansoureh Majlesi,[3] and Noushin Jafari[4]

[1] *George Washington Institute for Spirituality and Health, School of Medicine and Health Sciences, George Washington University, Washington, DC 20036, USA*
[2] *Community Medicine Department, School of Medicine, Isfahan University of Medical Sciences, Isfahan 81745-313, Iran*
[3] *Vice-Chancellery for Treatment, Isfahan University of Medical Sciences (IUMS), Isfahan 81656-47194, Iran*
[4] *Anesthesiology Department, School of Medicine, Isfahan University of Medical Sciences, Isfahan 81745-313, Iran*

Correspondence should be addressed to Amir Loghmani; a_loghmani@resident.mui.ac.ir

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Introduction. Diabetes is a major public health problem. Little is known about the spiritual well-being and its relationship with quality of life (QOL) in Iranian Muslim patients with diabetes. This study investigated the spiritual well-being and QOL of Iranian adults with type 2 diabetes and the association between spiritual well-being, QOL, and depression. *Methods*. A cross-sectional study was done among 203 patients with type 2 diabetes mellitus in Isfahan, Iran. Quality of life and spiritual well-being were measured using the functional assessment of chronic illness therapy-spiritual well-being (FACIT-Sp). Depression was assessed using the Patient Health Questionnaire-2 (PHQ-2). Descriptive analysis, Pearson's correlation, and multiple regression analysis were performed for statistical assessment. *Results*. The mean QOL was 61.00 (SD = 9.97) and the mean spiritual well-being was 30.59 (SD = 6.14). Sixty-four percent of our studied population had depressive disorders. There was a significant positive correlation between all QOL subscales and meaning, peace, and total spiritual well-being score. *Conclusion*. The results of this study showed poor QOL and spiritual well-being and high prevalence of depression in Iranian patients with type 2 diabetes compared to other studies' findings especially western studies. This indicates the need for psychosocial and spiritual support in caring for Iranian patients with diabetes.

1. Introduction

Diabetes is a serious public health problem with an increasing incidence in Middle East countries as well as Iran [1]. Five of the 10 world's highest national prevalences of diabetes occur in Middle East countries, that might be expected to increase in the coming decades [1, 2]. The last nationally representative report of the burden of diabetes in Iran showed a high prevalence of diabetes (8.7%) in Iranian population, which is estimated to rise to 9.8% in upcoming decades [3].

Diabetes is one of the most psychologically demanding chronic medical disorders and is often associated with several psychiatric disorders [4]. Diabetic patients are about twice as likely as people without the condition to have anxiety, depression, and serious psychological problems [5–7]. Emotional distress may influence outcomes in terms of glycemic control, adherence to medical treatment, cost of care, and mortality [8].

The interface between poor physical health and poor mental health affects quality of life (QOL) of diabetic patients [9]. QOL is a broad, multifaceted concept [10]. It incorporates the individual's subjective perception of physical, emotional, cognitive, social, and spiritual domains of an individual's life [11]. Several studies indicated that diabetic patients have

reduced QOL compared to general population in the same age group [12, 13], and their QOL decreases with diseased progression and complications [14, 15].

Among several components of QOL, spirituality receives more attention in recent years [16]. Spirituality is defined as "the aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred" [17]. There is a strong association between spirituality and coping with chronic medical disease [18], willingness to live [19], reducing anxiety and depression [20], and improving quality of life [21].

The importance of addressing spirituality in diabetes management is indicated in several studies. Previous studies on African American population showed that there is a positive relationship between spiritual well-being and coping with diabetes, glycemic control, and self-management. [22–24]. However, there is minimal information regarding the spirituality of patients of different cultures such as Iranian Muslim patients.

In two qualitative studies from Iran, the role of spiritual beliefs in coping with diabetes and patients' empowerment is indicated [25, 26]. However, there is still lack of evidence regarding measuring the spiritual well-being and assessing its association with QOL using a standard tool. Different cultural groups and religious affiliations may emphasize different aspects of their QOL and spiritual well-being [27]. Assessing the local perspectives by international instruments will provide an opportunity for cross-cultural comparisons and developing the best interventions based on the needs of patient with diabetes.

The aims of this study were to describe the spiritual well-being and QOL of Iranian adults with type 2 diabetes and to investigate the association between spiritual well-being, QOL, and depression among Iranian adults with type 2 diabetes.

2. Materials and Methods

This was a cross-sectional study, which was conducted in two diabetes care institutes in Isfahan, Iran, from January 2013 to April 2013. These institutes are main diabetes care centers located in two different geographic areas of Isfahan city, covering more than 10,000 diabetes patients with diverse socioeconomic characteristics. The target population was patients with type 2 diabetes who had registered in these institutes and consented to participate. People aged 18 or above with a definitive diagnosis of type 2 diabetes, as confirmed by a physician, with or without complication and the ability to read and write Farsi, were enrolled in the study. The exclusion criteria was any documented diagnosis of end-stage renal disease, psychotic disorder, dementia, or blindness.

2.1. Instruments. To assess the spiritual well-being and QOL of participants, we used the functional assessment of chronic illness therapy-spiritual well-Being (FACIT-Sp) scale. This is a valid and reliable instrument that was developed in the 1990s to provide an inclusive measure of spirituality in research and clinical practice [28, 29]. This questionnaire assesses spirituality well-being as well as QOL regardless of religious or spiritual tradition [29]. It consists of a core general questionnaire for measuring QOL and an additional scale for measuring spirituality. The core general questionnaire that measures QOL (FACT-G) is composed of four subscales: physical well-being (PWB = 7 items), social/family well-being (SWB = 7-items), emotional wellbeing (EWB = 6 items), and functional well-being (FWB = 7 items) [30]. The additional scale for measuring spirituality contains 12 items and three subdomains (peace, meaning, and faith) [29]. The FACIT-Sp is self-administered and uses a 5-point Likert-type scale (0 = not at all; 4 = very much) and the score range of 0–48 [29]. The higher score represents the better spiritual well-being. All three scales have high internal consistency (Cronbach's alpha for total scale 0.87, for meaning/peace subscale 0.81, for faith subscale 0.88). This questionnaire is translated and validated to Persian by authors and we found that the Persian version of the FACIT-Sp scale is a reliable and valid tool for the clinical assessment of, and research into, the spiritual well-being of Muslim Iranians [31].

We evaluated depression using the 2-item patient health questionnaire depression module, the PHQ-2 [32]. This tool inquires about the frequency of depressed mood and anhedonia over the past 2 weeks, scoring each as 0 (not at all) to 3 (nearly every day); thus, the PHQ-2 score can range from 0 to 6. PHQ-2 cutoff score of ≥3 had the best tradeoff between sensitivity (79%) and specificity (86%) for any depressive disorder. This tool appears promising as a brief sensitive and specific tool for detecting and monitoring of depression [33].

To assess the glycemic control of participants we consider glycosylated hemoglobin HbA_{1c} as a reliable index of long-term glycemic control in patients with diabetes. An elevated HbA_{1c} indicates poor long-term glycemic control [34]. In this study HbA_{1c} level ≤ 7 was considered as controlled diabetes and HbA_{1c} level > 7 as uncontrolled diabetes.

Patients were randomly sampled using IBM SPSS Statistics for Microsoft Windows, Version 21. Demographic information (age, marital status, education, and occupation) was collected through a self-administered questionnaire. Clinical data including laboratory and concurrent chronic disease were extracted from medical records. After oral and written consent, participants were instructed to read the brief directions at the top of the questionnaire. After confirming the participants' correct understanding, they were encouraged to complete every item in private. A total of 203 participants completed the FACIT-Sp, PHQ-2, and demographic information questionnaire.

2.2. Statistical Analysis. The sample was described using means and standard deviations for quantitative variables and relative frequencies and percentages for categorical variables. t-test analysis was used to compare the mean of FACIT-Sp and PHQ-2 scores in two groups (controlled diabetes and uncontrolled group).

The bivariate relationship between spiritual well-being, QOL subscales, depression, and diabetes control (HbA_{1c}) was assessed by calculating Pearson correlation coefficients. Variables were selected for inclusion in the multiple regression model based on theoretical importance as well as significance in bivariate analyses. Multiple regression analysis was used to assess the predictor role of the 12-item spiritual well-being subscale of the FACIT-Sp subdomains (peace, meaning, and Faith) on determinants of QOL. The FACT-G total scores and its subdomains (PWB, SWB, EWB, and FWB) considered as the dependent variables [35] and the independent (predictor) variables (peace, meaning, and faith, PHQ-2 and HbA_{1c}) were entered in blocks.

Collinearity diagnostics were performed by means of the variance inflation factor (VIF) for each independent variable entered in the regression equations. A VIF > 10 was considered as positive multicollinearity [36]. The level of significance was set at $P > 0.05$, and all tests were two-tailed. Data were analyzed using SPSS (version 21) for Windows.

3. Results

Over a six-week-period, 223 patients met the inclusion criteria and were recruited. Twenty patients were excluded because of dementia ($n = 6$), psychotic disorders ($n = 3$), and declining to take part ($n = 11$). The mean age of all participants was 55.42 (SD = 10.67) with a range of 18–87 years. The majority of participants were female (69.5%) and married (95.1%). Seventy-two percent of participants were housewives and 8.4% were retired. Seventy-six percent of them were educated below high school diploma, 29 patients received their diploma, and 18 patients had master degree from the university. No gender differences were detected regarding education. All patients identified themselves as Muslim. There was no statistically significant difference regarding demographic characteristics between patients who participated and who declined ($P > 0.05$).

The mean of fasting blood sugar (FBS) was 163.26 (SD = 62.14). Among our participants, 76 diabetic patients (37.4%) were in the controlled group ($HbA_{1c} \leq 7$) and 127 (63%) were in uncontrolled group ($HbA_{1c} > 7$).

The mean score of FACT-G was 61.00 (SD = 9.97). The mean spiritual well-being (FACIT-Sp12) score was 30.59 out of 48 (SD = 6.14) with the highest mean score in the faith subscale (mean = 10.78, SD = 2.89) in comparison to the other subscales. The mean PHQ-2 score was 4.7 (S.D. = 1.5). Considering the cutoff score of ≥3, 63.5% of our studied population had depressive disorders.

In one-way ANOVA, there was no statistically significant difference in QOL, spiritual well-being, and depression scales regarding demographic status ($P > 0.05$). Among FACIT-Sp subdomains, the mean of physical well-being, emotional well-being, functional well-being, and peace scores was higher in controlled diabetes group in comparison to uncontrolled group ($P < 0.05$). People in uncontrolled group had higher score in PHQ-2 score of depression ($P = 0.047$). Table 1 shows participants' quality of life as well as spiritual well-being and depression scores in two groups.

Table 2 lists the bivariate Pearson correlation coefficients between the QOL, spirituality, and depression measures. There was a statistically significant positive correlation between all QOL subscales (physical, social, emotional, and functional well-being) and meaning, peace, and total FACIT-Sp-12 scores. HbA_{1c} was negatively associated with physical well-being, emotional well-being, functional well-being, and peace, otherwise, positively correlated with depression. Depression was also significantly correlated with all QOL and spiritual well-being subscales and this association was highest with emotional well-being ($r = -0.56$, $P < 0.001$), physical well-being ($r = -0.52$, $P < 0.001$), and peace ($r = -0.48$, $P < 0.001$).

In regression analyses, after evaluating the correlations among the independent variables, no multicollinearity problem was detected. Meaning and peace subscales of FACIT-Sp12 were significantly associated ($P < 0.05$) with total QOL. Meaning, peace, faith, and depression were significantly associated with physical well-being ($R^2 = 0.37$, $P < 0.005$). In each of these analyses, the meaning and peace subscales were significantly associated with the subdomains of QOL. The faith subscale, on the other hand, was only associated with physical well-being and did not provide an independent contribution to prediction of other domains. Furthermore, HbA_{1c} did not contribute significantly to any of these outcomes (Table 3).

4. Discussion

This study was designed to assess spiritual well-being and QOL together with depression in a population of Iranian people with type 2 diabetes and to explore their possible associations. Our studied population had poor spiritual well-being and quality of life in comparison to the normative data of the general U.S. population [37] but similar to another study from Iran in patients with cancer [31].

In our Muslim population, the highest score of spiritual well-being was related to faith subdomain of FACIT-Sp12. This coheres with other studies in Muslim population [38, 39]. The "faith" component of FACIT-Sp-12 is most often associated with religion and religious beliefs [40], but spirituality extends beyond religion and is independent of commitment to a particular religion or doctrine [41]. Spirituality is experiencing transcendent meaning and purpose in life as well as sense of connectedness. Several studies indicated the importance of spirituality in coping with disease, better QOL, and hopefulness [42–45]. In our study meaning and peace subscales of FACIT-Sp12 were significantly associated with all aspects of QOL. In regression analyses, higher meaning and peace were related to better physical, social, emotional, and functional well-being as well as total QOL, whereas higher faith was only associated with physical well-being. These results are consistent with our study on Iranian patients with breast cancer, which showed that meaning and peace are more robust indicators of QOL than faith. This may be due to negative religious coping (e.g., belief that one's illness is God's punishment or abandonment) in patients with chronic illnesses [46]. However, this result is not specific to Iranian

Table 1: FACT-G, FACIT-Sp12, and PHQ-2 scores of two groups (controlled and uncontrolled diabetic patients).

Domains	Group	Mean	Std. deviation	*P* value
Physical well-being	Controlled	17.61	6.18	0.033
	Uncontrolled	15.73	5.99	
Social/family well-being	Controlled	16.39	5.18	0.482
	Uncontrolled	15.84	5.52	
Emotional well-being	Controlled	10.80	5.38	0.045
	Uncontrolled	9.27	5.09	
Functional well-being	Controlled	19.55	4.24	0.004
	Uncontrolled	17.52	5.01	
Meaning	Controlled	10.97	3.11	0.214
	Uncontrolled	10.44	2.76	
Peace	Controlled	10.30	2.49	<0.001
	Uncontrolled	8.46	2.68	
Faith	Controlled	11.03	2.68	0.339
	Uncontrolled	10.63	3.00	
FACIT Sp12-score	Controlled	32.31	6.34	0.002
	Uncontrolled	29.55	5.79	
FACIT Sp-score	Controlled	95.15	13.88	0.005
	Uncontrolled	89.45	13.64	
PHQ-2 score	Controlled	2.73	1.87	0.047
	Uncontrolled	4.22	1.70	

HbA_{1c} level ≤ 7: controlled diabetes ($n = 76$).
HbA_{1c} level > 7: uncontrolled diabetes ($n = 127$).

Table 2: Pearson's correlation coefficients between FACT-G, FACIT-Sp12, and PHQ-2.

	Physical well-being	Social well-being	Emotional well-being	Functional well-being	Peace	Meaning	Faith	Spiritual well-being	PHQ-2	HbA_{1c}
Physical well-being	1	0.245**	0.604**	0.381**	0.433**	0.430**	0.476**	0.376**	−0.522**	−0.159**
Social Well-being		1	0.351**	0.448**	0.475**	0.400**	0.009	0.409**	−0.315**	−0.054
Emotional well-being			1	0.418**	0.492**	0.558**	0.107	0.534**	−0.565**	−0.141*
Functional well-being				1	0.564**	0.601**	0.189**	0.626**	−0.408**	−0.153*
Meaning					1	0.498**	0.089	0.739**	−0.460**	−0.002
Peace						1	0.237**	0.797**	−0.476**	−0.253**
Faith							1	0.619**	−0.203**	−0.127
Spiritual well-being								1	−0.511**	−0.213**
PHQ-2									1	0.230**
HbA_{1c}										1

**Correlation is significant at the 0.05 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

population and is replicated in several international studies. A large Australian study on 449 cancer patients found that the meaning/peace component being more highly related to QOL than the faith component [47]. Similarly, in two longitudinal studies, Yanez et al. showed that meaning and peace act as a positive resource for cancer survivors, but faith may serve to facilitate or even hinder positive adjustment [48]. In another study Canada et al. examined the 3-factor model for FACIT-SP-12 in two hundred and forty females previously diagnosed with cancer. They found that the peace factor was only correlated with mental health scores, meaning it was associated with both physical and mental health scores, and faith was negatively associated with mental health scores [49]. Edmondson et al. examined the role of religion in

Table 3: Association of FACT-G and its subdomains with spiritual well-being, depression, and HbA_{1c}.

Predictors	Dependent variables									
	Physical well-being		Social well-being		Emotional well-being		Functional well-being		FACT-G	
	β	P	β	P	β	P	β	P	β	P
Meaning	0.182	**0.010**	0.339	**0.000**	0.179	**0.006**	0.347	**0.000**	0.369	**0.000**
Peace	0.195	**0.007**	0.217	**0.005**	0.321	**0.000**	0.383	**0.000**	0.253	**0.001**
Faith	0.192	**0.001**	0.087	0.171	0.053	0.335	0.053	0.329	0.111	0.061
PHQ-2	−0.374	**0.000**	−0.075	0.311	−0.344	**0.000**	−0.046	0.466	−0.111	0.107
HbA_{1c}	−00.049	00.419	−0.006	0.923	−0.012	0.824	−0.040	0.475	−0.052	0.387
R^2	**0.374**		**0.270**		**0.454**		**0.461**		**0.368**	
F	**23.56**		**14.61**		**32.76**		**33.70**		**22.92**	

β: standardized beta; P: P value; method: enter.
The bold P values show the significant relationships among aspects of spirituality and QOL. Meaning and peace were significantly associated with all aspects of QOL.

providing a sense of meaning and concluded that "religious is beneficial to the degree to which it facilitates the creation and maintenance of meaning, coherence, and purpose. Conversely, if religious beliefs and practices fail to provide meaning or provide meaning that is destructive (i.e., God no longer cares for me), they are ineffectual or detrimental to well-being" [50]. However, many Islamic scholars believe that there is no distinction between religion and spiritual concepts, and spirituality is meaningless without religious thoughts and performances [51]. Coherent with this, Islamic clergy men are included in some hospitals in Iran to provide the religious care to patients. The main aspect of this model of care is to help patients to do the Islamic rituals appropriately, which is far away by the spiritual care model that includes an interdisciplinary management to address all dimensions of care, including the spiritual, religious, and existential as well as physical and psychological.

Diabetes destroys not only the physical well-being of the patients but also threatens the social, functional, and emotional well-being of the patients. This condition causes the patients to ask about themselves, their purpose, and their meaning in life. Victor Frankl in his famous book "Man's search for meaning" states "Human is not destroyed by suffering; he is destroyed by suffering without meaning" [52]. Meaning has been assessed in terms of the sense of purpose in life, productivity, and reason for living [29]. This sense of meaning helps the patients to cope with their disease, reframing their lives, having an optimistic look on life and a "fighting spirit" against their disease [53, 54]. Previous studies on diabetic patients indicated that higher spiritual well-being is associated with lower HbA_{1c} and better adjustment to disease [22]. The findings of this study reflects that the sense of inner peace and intrinsic strength may guard against negative feelings and probably result in maintaining higher self-care behaviors and thus, greater glycemic control in those with diabetes. This highlights the need for considering spiritual issues in caring of the diabetic patients [55].

In our study controlled diabetes group (HbA_{1c} level ≤ 7) has better QOL and spiritual well-being in comparison to uncontrolled group (HbA_{1c} level > 7). This is in line with the results of other studies indicating significant association of spiritual well-being and diabetes control [22, 23, 43]. A qualitative study on 70 African American women with type 2 diabetes showed the influence of spirituality in self-management of people with type 2 diabetes resulted in diabetes control [56].

In our studied population, individuals in the uncontrolled group had worse QOL. Diabetes can exert a negative impact on QOL [12]. Since diabetes is a chronic lifelong disease, patients with diabetes must deal with their disease all day. Medical therapy, diabetes complications, episodes of hypoglycemia, and fear of long term consequences may lead to reduced quality of life [57]. Furthermore, psychosocial toll of living with diabetes and psychiatric disorders such as depression were shown to be associated with poorer QOL [58].

Depression and diabetes are significantly connected to each other [59]. In this study, 63.5% of our studied population had depressive disorders. The prevalence of depression in our diabetic sample was higher than the range of 2%–9.5% in Iranian adults [60–62] as well as the rate of 8.3–28.8% of the diabetic patients in the United States [63]. However, the estimates of depression prevalence among individuals with diabetes appear to be higher in developing countries [64]. In a single point cross-sectional study done in India, depression was diagnosed in 43.34% [65]. In a study done in Pakistan, depression was found in 43.5% of patients with diabetes [66]. In another study from Iran, Khamseh et al. found major depression in 71.8% of a sample of 206 patients with type 1 and type 2 diabetes [67]. Other reports from Iran using different tools for depression showed high rates of depression in people with diabetes [68–70]. The higher coincidence of depression in these populations may be due to the lower socioeconomic status that is a known risk factor for depression [71]. Furthermore, the high prevalence of depression in our sample may be due to use of a screening tool which may detect psychological distress rather than clinical depression and so may increase rates of disorder [72]. The results of our study showed that depression is negatively associated with all aspects of quality of life and spiritual well-being. In the regression analysis, depression was a significant predictor of physical and emotional well-being. This coheres with the results of previous studies that showed a moderate, negative association of depressive symptoms on physica and mental health [73–75], indicating the importance

of detecting and managing depressive symptoms in diabetes care.

Our study, while having much strength, involved some limitations that should be mentioned. Our findings cannot be generalized to the general population of the patients with diabetes because sicker and older people with type 2 diabetes did not respond to the survey. Participants were from two clinics populations, and there was no general population comparison group to compare. Also, it is important to be aware that FACIT-Sp is not a diabetes specific tool to assess the quality of life and spiritual well-being. In this study we treat the spiritual well-being as the predictor variable. However the developers of this instrument believe that "... under certain conditions, spiritual well-being may function as a process variable or even as a dependent or outcome variable." Furthermore we did not assess the religious coping pattern in our participants. More research, particularly longitudinal, is warranted to direct the causation between spiritual well-being, QOL, and depression in diabetic patients and to examine the feasibility of deriving a spiritual history in diabetes care.

Despite these limitations, the current study appears to be unique in that we assessed the QOL, and spiritual well-being and their association among diabetic patients in an Islamic context.

5. Conclusion

The results of this study showed poor QOL and spiritual well-being and high prevalence of depression in Iranian patients with type 2 diabetes compared to other studies' findings, especially Western studies. This indicates the need for psychosocial and spiritual support in caring for Iranian patients with diabetes.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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Research Article

Ayurveda: Between Religion, Spirituality, and Medicine

C. Kessler,[1] M. Wischnewsky,[2] A. Michalsen,[1] C. Eisenmann,[3] and J. Melzer[4,5]

[1] *Department of Internal and Complementary Medicine, Immanuel Hospital and Institute of Social Medicine, Epidemiology & Health Economics, Charité-University Medical Center, Research Coordination, Königstraße 63, 14109 Berlin, Germany*
[2] *eScience Center, University of Bremen, Universitätsallee, 28359 Bremen, Germany*
[3] *Graduate School in History and Sociology, Bielefeld University, 33615 Bielefeld, Germany*
[4] *Institute of Complementary Medicine, University Hospital Zurich, 8001 Zurich, Switzerland*
[5] *Department for Psychiatry, Psychotherapy and Psychosomatics, Königin-Elisabeth-Herzberge Hospital, 10365 Berlin, Germany*

Correspondence should be addressed to C. Kessler; kessler.christian@gmail.com

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Ayurveda is playing a growing part in Europe. Questions regarding the role of religion and spirituality within Ayurveda are discussed widely. Yet, there is little data on the influence of religious and spiritual aspects on its European diffusion. *Methods*. A survey was conducted with a new questionnaire. It was analysed by calculating frequency variables and testing differences in distributions with the χ^2-Test. Principal Component Analyses with Varimax Rotation were performed. *Results*. 140 questionnaires were analysed. Researchers found that individual religious and spiritual backgrounds influence attitudes and expectations towards Ayurveda. Statistical relationships were found between religious/spiritual backgrounds and decisions to offer/access Ayurveda. Accessing Ayurveda did not exclude the simultaneous use of modern medicine and CAM. From the majority's perspective Ayurveda is simultaneously a science, medicine, and a spiritual approach. *Conclusion*. Ayurveda seems to be able to satisfy the individual needs of therapists and patients, despite worldview differences. Ayurvedic concepts are based on anthropologic assumptions including different levels of existence in healing approaches. Thereby, Ayurveda can be seen in accordance with the prerequisites for a Whole Medical System. As a result of this, intimate and individual therapist-patient relationships can emerge. Larger surveys involving bigger participant numbers with fully validated questionnaires are warranted to support these results.

1. Introduction

Ayurveda, a form of Traditional Indian Medicine (TIM), literally translates from Sanskrit to "knowledge of life" or more precisely "systematic knowledge of the lifespan" [1]. Ayurveda is a Whole System of Medicine (WMS) [2–5]. In its South Asian countries of origin it has been practiced for more than 2000 years in an unbroken tradition and is thus one of the oldest WMS of mankind [6]. Ayurveda is fully recognized by the World Health Organization (WHO) as a medical science analogous to Traditional Chinese Medicine (TCM) and has amassed an enormous wealth of empirical healing knowledge. (Proto)scientific concepts have had a firm place in mainstream Ayurvedic medicine ever since around the beginning of the common era with the emergence of the "classic texts" (e.g., Caraka Samhita [7, 8]) and are centered around designated disciplines of logic and methodology [9]. In India and some neighboring countries, Ayurvedic medicine is officially and legally recognized as on par with conventional medicine. It is used in an area with more than 1.4 billion people as a broad system of medicine [10, 11]. The importance of Ayurveda in modern South Asian health care setups is reflected by the following figures: in India alone above 400,000 registered Ayurvedic physicians practice Ayurveda [12] and there are more than 250 universities and colleges where Ayurvedic medicine is systematically taught as a 4–6-year university degree program [13]. In its diagnostic and therapeutic approaches Ayurveda is steeped in the principles of salutogenesis [14] Primary, secondary, and tertiary prevention, patient self-empowerment, and self-efficacy play crucial roles in the holistic and multidimensional Ayurvedic approach to healing [15]. Ayurveda not only is a WMS but also incorporates eclectic philosophies of life that have helped to shape complex theories about health

and disease over more than three millennia, including philosophical, epistemological, and spiritual dimensions. For example, Ayurveda postulates a paradigmatic harmony of physiological, psychological, social, and environmental factors of the human microcosm and the universal macrocosm [16, 17].

In addition to its key role in Asian health care systems, it is playing a growing role in Complementary and Alternative Medicine (CAM), especially in integrative settings in Europe and North America. For instance, in Germany, Austria, and Switzerland Ayurveda is one of the fastest growing CAM methods [18]. An internet search for "Ayurveda" yields >7,400,000 entries in Google [19]. In 2011 the establishment of the German Medical Doctors Association of Ayurvedic Medicine (DÄGAM) took place [20]. In several training institutions throughout Germany professional development and training opportunities certified by various state-level German Medical Doctors' Associations are being offered (e.g., in Bavaria, Berlin, North Rhine-Westphalia, Schleswig-Holstein, Hessen, Hamburg, and Rhineland-Palatinate). Yet there is no national certificate for Ayurveda. Important areas of discussion surrounding the character of Ayurveda include (a) its underlying core concepts for diagnosis and therapy, (b) ultimate therapeutic aims, and (c) demarcation from other South Asian traditional medical systems (e.g., Siddha, Unani-Tibb) and modern western medicine and remain largely unanswered [17]. Inquiries regarding the importance of religion and spirituality within medical contexts have been posed repeatedly in Indology, Sociology, Anthropology, Religious Studies, and Medical Sciences [18, 21, 22]. Whole Medical Systems (WMS) are by definition complete and coherent systems of medical theory and practice that have evolved and continue evolving, in different regions, cultures, and time periods around the globe. They have evolved relatively independent of modern western medicine, for example, Traditional European Medicine (anthroposophy, homeopathy, and naturopathy), Traditional Chinese Medicine (TCM), Tibetan Medicine, or Arabian systems of medicine [23–29].

Concerning Ayurveda, two main opposing positions can be observed: [16] (a) supporters of "scientific" Ayurveda state that it has always been an empirical medical system in which religious and spiritual speculations are mere interpolations, alien to the system, or (b) supporters of "traditional" Ayurveda state that religious and spiritual elements have always been integral components of Ayurveda as a WMS. These positions are, however, not mutually exclusive.

There is growing acceptance and demand for Ayurveda in western countries and there are currently more than 2500 online publications on Ayurvedic therapies in PubMed [30] and greater than 52,000 referenced Ayurveda research articles in the Indian digital database DHARA (Digital Helpline for Ayurveda Research Articles) [31]. It is hypothesized that spirituality might be a main attractor for the increasing popularity of Ayurveda [32]; however, there is still little scientific evidence regarding the influence of religious and spiritual elements on the diffusion and implementation of modern hybrid forms of Ayurveda [33–35].

This is striking because spirituality has already entered discussions in neurobiology [36] and most of all quality of life (QoL) research [37], especially in chronic diseases [38–44]. However, cultural and spiritual attractors of non-western CAM have been discussed in recent years [45, 46] and are beginning to be researched [47, 48]. The rather late awareness of spiritual aspects in CAM might be due to the impact that the methodology of Evidence-based Medicine (EbM) had on the medical system as such and in particular on research initiatives in CAM. More recently, after CAM research has managed to close some evidence gaps, researchers have become aware of the necessity to conduct research focused not only on specific evidence but also on unspecific or contextual or patient-centred aspects (related to CAM) [49–52]. This is by no means in opposition to EbM because one of its founders defined EbM as the integration of (a) the best research evidence with (b) clinical expertise and (c) patient values [53]. However, clinical research had focused predominantly on the two former aspects until recently.

In order to explore the general role of religion and spirituality specifically within the field of Ayurveda, a new questionnaire was developed. While existing questionnaires, for example, the Spiritual Perspective Scale [54, 55], the S-PRIT [56], the FACIT-Sp [57], the Spiritual Well-Being Scale [58], Aspects of Spirituality [59], the SpREUK [60], the Health and Religious Congruency Scale [61] and others [62–68] would be useful for further analysis, the objective of this pilot survey was to focus on the specificities of the complex field of Ayurveda in a western setting, leaving the definition of spirituality as open as possible. Spirituality and religion were thereby not used as analytical but as emic (ethno)categories [69–71]. This questionnaire was distributed among patients accessing and therapists offering Ayurveda in German-speaking countries.

1.1. Hypothesis. To shed some light on the influence and meaning of religious and spiritual aspects on the diffusion and implementation of Ayurvedic practices in Europe the following hypotheses were formulated to the survey a priori.

(i) *Hypothesis 1.* Participants who apply Ayurveda as a therapist or receive Ayurveda as a therapy are religious and/or spiritual. Ayurveda is perceived as a healthcare approach which incorporates religious and spiritual demands.

(ii) *Hypothesis 2.* For patients and therapists, principles of Ayurveda and modern science are not in conflict. Concepts of religion, spirituality, and science can be integrated.

(iii) *Hypothesis 3.* Elements from South Asian cultures, religions, and philosophies are supposed to have an effect on the results of Ayurvedic therapies.

(iv) *Hypothesis 4.* Women are more open to religious and spiritual aspects in the case of Ayurvedic therapists and patients than men.

2. Methods

2.1. Survey. To test these hypotheses a questionnaire was developed and distributed among patients and therapists in

western Ayurvedic health care settings in Frankfurt a. M., Birstein, Passau, Bremen, Hanover, Zurich, and Vienna. These settings included (a) private Ayurvedic practices, (b) the International Ayurveda Symposium in Birstein, and (c) direct contacts of the corresponding author. To rule out any potential selection bias of the participants, questionnaires were given to the first sequential 300 eligible persons contacted.

To be included participants had to be ≥18 years of age. Patient participants had to have had ≥1 experience with Ayurvedic therapies and therapist participants had to have had at least one course of institutionalized Ayurvedic training and had to offer Ayurvedic therapies or have a plan to do so at the time of inclusion (details about the individual training duration were not further assessed).

Patients were excluded if they suffered from a life threatening disease, in order to avoid systematic bias/confounders due to a "last exit mentality" which can influence the overall compliance with respect to their choice of therapies and therapists.

The survey with anonymized questionnaires, part of a master thesis for the corresponding author, was performed at the Institute for Indology and Tibetology, Philosophical Faculty, University of Göttingen, Germany. Of note this is not a clinical study, and according to university procedures therefore no ethical approval was mandatory and informed consent, anonymized questionnaires, and respect of data privacy were sufficient.

2.2. Construction of the Questionnaire. Firstly, a preliminary questionnaire considering content validity, internal consistency, criterion validity, construct validity, and reproducibility was developed [72].

The items for the preliminary questionnaire version were derived from three sources: (1) exploratory interviews with expert representatives, (2) as discussed in the research literature, and (3) items inspired by existing questionnaires in the field (e.g., "Aspects of Spirituality," see above). This preliminary version of the questionnaire was pretested with 10 test persons accustomed to filling out questionnaires, to gain information on reliability and validity aspects. The questionnaire was then modified based on the received feedback and reexamined. It was then modified and approved by expert representatives and scholars from various disciplines (Medicine, Indology, Religious Sciences, Informatics, and Sociology). This resulted in a final version of the questionnaire to be distributed to the target group in its finalized version. Therefore the underlying questionnaire might be regarded as a "standard" questionnaire in the sense of Olsen [73]. A validated questionnaire in the traditional sense was not possible, since we could not compare this instrument against a gold standard, as such a gold standard for Ayurveda as a Whole Medical System this context does not yet exist [58].

The final version of the questionnaire included a section for sociodemographic baseline data and 50 questionnaire items. The majority of the items are scored on a 5-point Likert scale ranging from "total" disagreement to "total" agreement (0–4) or on a 3-point Likert scale (i.e., "yes," "no," and "do not know"). In order to obviate the problem of acquiescence bias, we designed a scale with balanced keying (an equal number of positive and negative statements), while possible distortions through central tendency and social desirability are more difficult to control.

2.3. Statistics and Validation. All returned questionnaires underwent statistical analysis. For descriptive statistics each item was analyzed separately and in some cases item responses were summed to create a score for a group of items. The frequencies of the various variables were calculated. Differences in frequency distributions were tested with the χ^2-Test. Principal Component Analyses with Varimax Rotation and Kaiser Normalization were used to represent the main structural features of the multivariate data set by a smaller number of attributes. This is achieved by transforming data from the original coordinate system (i.e., spanned by the original attributes) into a different coordinate system where the variables are linearly independent. The factor loading, a standardized scoring coefficient, was used to determine the contribution of a variable to a particular factor. Variables with rotated absolute factor values >0.5 (or < −0.5) for a particular factor were considered significant contributors for that factor (see Table 3. The 12 variables are replaced by 4 factors: for example, the variables "Ayurveda = Spirituality?," "Ayurveda = Philosophical system?," and "Ayurveda = Way of life?" have rotated absolute factor values >0.5 for factor 1, which expresses a strong correlation between these variables; all other variables have factor values ≤0.5 or ≥ −0.5 with respect to factor 1; therefore they do not significantly contribute to this factor). Negative rotated absolute factor values express inverse correlations. We used 10 or more test persons per item in connection with multivariate analyses. Ten test persons per 1 item is a well-known rule of thumb for the number of instances (data sets) in connection with knowledge discovery processes, that is, multivariate analyses. Based on reliability analyses inner consistencies and discriminatory power were tested. A significance level of $P < 0.05$ was taken as a basis. Calculations were performed with NCSS (version 2007) and SPSS (version 19).

The validation of questionnaires in general is based on methods of the classical test theory and factor analyses for the design of questionnaire items. Factor analysis was one of the central methods for the evaluation of this questionnaire. It serves for the grouping of parameters and for the partial validation of this questionnaire. The a priori allocation of different subject areas was tested by factor analyses. For each subject area a factor analysis was calculated to find out whether the chosen subject area captures the construct or whether the existence of several factors hints at the existence of different subconstructs. We used the Principal Components Analysis as extraction method. As a support for finding out the number of factors of a subject area (=number of subconstructs) we used the Kaiser-Guttman criterion [74] (number of factors to be extracted = number of the factors with eigenvalue >1) and the scree test of the eigenvalue course [75].

Table 1: Sociodemographic data.

Parameters	Therapists	Patients	Total	*P* value
Number of patients (%)	70 (50.0%)	70 (50.0%)	140 (100%)	
Age				0.296
<30	6 (11.6%)	2 (2.9%)	10 (7.2%)	
30–50	42 (60.9%)	50 (71.4%)	92 (66.2%)	
>50	19 (27.5%)	18 (25.7%)	37 (26.6%)	
Gender				0.693
Male	18 (25.7%)	16 (22.9%)	34 (24.3%)	
Female	52 (74.3%)	54 (77.1%)	106 (75.7%)	
Education				0.923
Secondary school	5 (7.1%)	5 (7.1%)	10 (7.1%)	
Junior high school	16 (22.9%)	19 (27.1%)	35 (25.0%)	
High school	13 (18.6%)	11 (15.7%)	24 (17.1%)	
University/college	31 (44.3%)	28 (40.0%)	59 (42.1%)	
Others	5 (7.1%)	7 (10.0%)	12 (8.6%)	
Actual profession				<0.001
Medical doctor	24 (34.8%)	9 (12.9%)	33 (23.7%)	
Alternative practitioner	5 (7.2%)	0 (0%)	5 (3.6%)	
Ayurveda therapist	22 (31.9%)	11 (15.7%)	33 (23.7%)	
Yoga instructor	3 (4.3%)	1 (1.4%)	4 (2.9%)	
Psychologist	1 (1.4%)	0 (0%)	1 (0.7%)	
Medical associated profession	3 (4.3%)	3 (4.3%)	6 (4.3%)	
Others	11 (15.9%)	46 (65.7%)	57 (41.0%)	
Income (€ per month)				0.233
<1000	17 (25.0%)	7 (10.3%)	24 (17.6%)	
1000–1500	11 (16.2%)	11 (16.2%)	22 (16.2%)	
1500–2000	9 (13.2%)	12 (17.6%)	21 (15.4%)	
2000–2500	7 (10.3%)	6 (8.8%)	13 (9.6%)	
>2500	16 (23.5%)	17 (25.0%)	33 (24.3%)	
Unknown	8 (11.8%)	15 (22.1%)	23 (16.9%)	
Number of children				0.653
0	28 (40.0%)	34 (49.3%)	62 (44.6%)	
1	11 (15.7%)	11 (15.9%)	22 (15.8%)	
≥2	31 (44.3%)	24 (34.7%)	55 (39.6%)	
Location (number of inhabitants)				0.806
<5000	10 (14.3%)	8 (11.6%)	18 (12.9%)	
5000–50 000	18 (25.7%)	17 (24.6%)	35 (25.2%)	
50 000–100 000	11 (15.7%)	8 (11.6%)	19 (13.7%)	
>100 000	29 (41.4%)	35 (50.7%)	64 (46.0%)	
Unknown	2 (2.9%)	1 (1.4%)	3 (2.2%)	

3. Results

Overall 300 questionnaires were distributed (120 in private practices, 130 at the International Ayurveda Symposium in Birstein, and 70 through direct contacts of the corresponding author). 140 completed questionnaires were returned, exactly (and coincidently) 70 from patients and 70 from therapists (53 from private practices, 45 from the 7th International Ayurveda Symposium in Birstein, and 42 from professional contacts of the corresponding author). Following the sociodemographic background, the results of the questionnaire will be summarized in order of the respective hypotheses.

Parts of the results are presented as pooled data from patients and therapists wherever there is no significant difference between the two groups.

3.1. Baseline Data

Sociodemographic. Among the participants of the survey a significant difference in sociodemographic data was only found for profession but not for age, gender, education, income, or location (Table 1).

Other. Four survey participants (all patients) had only 1 experience with Ayurveda at the time of the interview.

Table 2: Characterization of Ayurveda by therapists and patients.

Ayurveda is a...	Therapists	Patients N (%)	Total	Total number of valid cases	P value
Health doctrine	67 (100%)	69 (100%)	136 (100%)	136	1
Medical system	66 (97.1%)	57 (91.9%)	123 (94.6%)	130	0.196
Philosophical system	54 (87.1%)	37 (71.2%)	91 (79.8%)	114	0.035
Science	60 (92.3%)	53 (93.0%)	113 (92.6%)	122	0.887
Religious doctrine	16 (30.8%)	18 (36.0%)	34 (33.3%)	102	0.575
Religion	7 (14.0%)	4 (8.5%)	11 (11.3%)	97	0.394
Spirituality	47 (75.8%)	39 (69.6%)	86 (72.9%)	118	0.452
Esoterism	7 (13.7%)	5 (9.8%)	12 (11.8%)	102	0.539
Philosophy of life	39 (73.6%)	34 (66.7%)	73 (70.2%)	104	0.441

The individual training range from the surveyed therapists ranges widely from below three months to a 4–6-year academic Ayurvedic training in South Asia.

3.2. Findings Related to Hypothesis 1. 65% of the respondents belong to a religion and describe themselves as religious/spiritual. 81% describe the influence of religion and spirituality on their daily life as important. 73% consider Ayurveda to be a form of spirituality (76% of therapists, 57% of patients), but only 11% think of Ayurveda as a religion (findings not shown).

Traditional Christian values and beliefs are confirmed (e.g., 77% believe in God), but in addition a majority also believe in non-Christian concepts (karma 66%, rebirth 64%, and transmigration of the soul 58%). Patients adhere more to traditional Christian values and beliefs than therapists; for instance, a belief in a Christian god can be observed among 83% of patients and 71% of therapists ($P = 0.107$). Yet at the same time therapists adhere more to traditional South Asian values and beliefs: 84% of therapists and 59% of patients believe in karma ($P = 0.003$), 74% of therapists and 54% of patients believe in rebirth ($P = 0.009$). A general affinity for South Asian religions is noticeable. 71% share a fascination for Buddhism and 38% for Hinduism (no significant differences between patients and therapists). 49% find Christian religions to be lacking mystical elements that can be better served by Buddhism or Hinduism. 43% think that South Asian religions can respond better to prevailing problems than western religions. 60% of all respondents believe that disease is conditioned through karma while 95% are convinced that faith and belief are important prerequisites for healing. Still 81% think that divine power and karma (66%) are important healing factors and 67% have prayed (74% among therapists, 61% among patients ($P = 0.138$)).

Three "groups of believers" can be delineated: (1) a group, whose members simultaneously believe in karma, nirvana, a universal soul, transmigration of the soul, and rebirth; (2) a group with a statistical relation between believing in the god, the devil, and angels; and (3) a group, characterized by simultaneous beliefs in a metaphysical sense of life and god(s).

The most prominent aspects of traditional Christian spirituality and of South Asian spirituality derived from this data are (1) belief in God (Bonferroni adjusted P value (adj. P) $P < 0.001$), (2) belief in divine beings (adj. $P < 0.001$), and (3) belief in rebirth (adj. $P = 0.010$). Only 3 patients and 1 therapist declared themselves as nonreligious. Nevertheless 3 of these believe in a cosmic soul, karma, rebirth, sense of life, divine beings, or transgression of soul, so only 1 "nonbeliever" remains in total.

3.3. Findings Related to Hypothesis 2. 100% of all participants (valid cases) consider Ayurveda to be a health doctrine, 95% to be a medical system, and 93% to be a science. 80% relate it to a philosophical system (87% among therapists, 55% among patients ($P = 0.035$)), while 73% of all respondents consider Ayurveda to be a form of spirituality. However, only 11% consider Ayurveda to be a religion (Table 2). 76% believe that Ayurvedic therapists have functions related to spiritual guidance (therapists 79%, patients 73% ($P = 0.641$)). Though a majority (93%) of respondents consider Ayurveda to be a science, only 28% think that Ayurveda is scientific in a modern western sense. 59% see Ayurveda as a complement to modern medicine, while more than 25% think that it should be used exclusively. Only about 30% state that Ayurveda should be analysed through scientific studies (therapists 29%, patients 32% ($P = 0.260$)). However, 76% think that medical aspects of Ayurveda are more important than religious and/or spiritual aspects (therapists 74%, patients 78% ($P = 0.635$)). 25% consider schooling in modern medicine to be a negative influence on the religious and spiritual characteristics of the Ayurvedic therapist.

The 12 variables in Table 3 could be reduced to 4 different factors: (1) factor 1 comprises the variables designating Ayurveda to have a spiritual nature, to be a philosophical system, and to be a way of life; (2) factor 2 accounts for the correlation that it is a religion, a religious doctrine, and esoteric; (3) factor 3 sees it as a medical system, a science, and a philosophy of life; and (4) factor 4 pulls together the perceptions of Ayurveda as a complement to modern medicine and as scientific in a modern western sense (Table 3).

3.4. Findings Related to Hypothesis 3. 65% of respondents believe that Ayurveda can be expediently practiced in the West, detached from South Asian culture, religion, and philosophy. At the same time 66% believe that Ayurvedic

Table 3: Factor analysis of participants' characterization of Ayurveda.

Variables	Factors			
	1	2	3	4
Ayurveda = spirituality?	**0.8**			
Ayurveda = philosophical system?	**0.8**			
Ayurveda = way of life?	**0.7**			
Ayurveda = religion?		**0.8**		
Ayurveda = religious doctrine?		**0.7**		
Ayurveda = esoterism?		**0.7**		
Ayurveda = medical system?			**0.8**	
Ayurveda = science?			**0.6**	
Ayurveda = philosophy of life?			**0.6**	
Ayurveda = complement to modern medicine?				**0.8**
Ayurveda = closed medical system, which does not require a combination with western medicine?				*−0.7*
Ayurveda = scientific in a modern western sense?				**0.5**

(Values x are omitted, if $-0.5 < x < 0.5$).

experts from South Asia should participate in teaching the medical system (which actually occurred in 87% of the cases). Almost 50% of the participants are convinced that Ayurvedic schooling should include at least one study visit to South Asia. 71% have the opinion that Ayurveda therapists should educate their patients in fundamental concepts of Ayurveda during the therapy. 50% of the interviewees think that basic knowledge about South Asian culture is important for patients. 61% agree with the statement that Ayurvedic therapists should sympathize with South Asian culture, religion, and philosophy, while 67% feel attached to South Asian culture, religion, and philosophy (80% among therapists, 55% among patients ($P = 0.003$)). 70% of the participants (therapists 73%, patients 67% ($P = 0.476$)) think that following an Ayurvedic lifestyle attitude is important, while 57% actually practice such a lifestyle (therapists 69%, patients 46% ($P = 0.016$)). A majority of the respondents feel well acquainted with the concepts of reincarnation, karma, migration of the soul, nirvana, attachment, atman, brahman, enlightenment, and Buddhism. 30% of the interviewees think that exact knowledge of the precise meaning of certain Ayurvedic Sanskrit terms is important, while 61% of the therapists assert that they actually have such knowledge. 54% think that an Ayurvedic apprenticeship for European Ayurveda therapists should last at least 2 years.

Principal Component Analysis reduced the 12 variables in Table 4 to 3 different factors: (1) factor 1 comprises moksha, dharma, samkhya, vedanta, atman, brahman, and attachment; (2) factor 2 pulls together the concepts of nirvana, enlightenment, attachment, and karma; and (3) factor 3 correlates the concepts of reincarnation, karma, Buddhism, and transmigration of souls (Table 4).

Table 4: Factor analysis of participants' knowledge of key words of South Asian religion/spirituality.

	Factor		
	1	2	3
Are you familiar with the following term? Moksha	0.9		
Are you familiar with the following term? Dharma	0.9		
Are you familiar with the following term? Samkhya	0.8		
Are you familiar with the following term? Vedanta	0.8		
Are you familiar with the following term? Atman/brahman	0.7		
Are you familiar with the following term? Nirvana		0.9	
Are you familiar with the following term? Enlightenment		0.8	
Are you familiar with the following term? Attachement	0.5	0.7	
Are you familiar with the following term? Attachment			0.9
Are you familiar with the following term? Karma		0.5	0.8
Are you familiar with the following term? Buddhism			0.7
Are you familiar with the following term? Transmigration of the soul			0.5

Extraction method: Main Component Analysis.
Rotation method: Varimax with Kaiser Normalization.
(values x are omitted, if $-0.5 < x < 0.5$).

3.5. Findings Related to Hypothesis 4. 76% of the participants are women; 65% of them are under 50 and above 30 years of age. Among women 65% identify themselves as Christian, among men 43%. Gender differences can also be seen in the answer pattern for the question on whether Ayurveda is spirituality. 81% of women answered "yes," among men 46% ($P < 0.001$). 91% of the women who consider Ayurveda to be a philosophy also relate it to spirituality ($P < 0.05$). 74% of women think of Ayurveda as a dictum for life, among men only 58% ($P = 0.148$). 50% of men, as compared to 35% of women, deny that Ayurveda is scientific in a modern western

sense ($P = 0.116$). 86% of women think that Ayurvedic therapists should be trained by Ayurvedic experts from South Asia, among men 64% ($P = 0.103$). 87% of women believe that Ayurvedic therapists should also have functions related to spirituality, as compared to 65% among men. 64% of the women think that therapists should sympathize with South Asian culture, religion, and philosophy as compared to 50% of men ($P = 0.390$). 73% of the women agree with the statement that a modern western medical education has no negative effects on the religious and spiritual characteristics of therapists, among men 59% ($P = 0.088$). 79% of the women have been involved with rituals (men 66%) and 72% with prayers (men 53%). 85% of the women believe in God, among men 58% ($P = 0.04$). 71% of the women believe in angels, among men 45% ($P < 0.001$). 64% of the male respondents and 44% of the female respondents find Christian religions lacking certain mystic perspectives which, for them, can be found in South Asian religions ($P = 0.026$). 50% of the men think that South Asian religions can offer better solutions to everyday contemporary problems than western religions, among women 43% ($P = 0.313$). When questioned whether South Asian religions play a role for one's partner, 57% of men answered "yes," while 22% of women answered yes ($P = 0.002$).

4. Discussion

The metapostulate of this work was confirmed that individual sociocultural backgrounds, especially religious and spiritual ones, of Ayurvedic therapists and patients influence attitudes and expectations regarding Ayurvedic health care. Statistical relationships between individual religious and spiritual backgrounds and individual decisions to offer or access Ayurvedic services are clearly shown.

A statistically significant larger fraction of women in both groups is noticeable. Both therapists and patients also share an above average education. Results support the thesis that Ayurveda is being used by a predominantly well-educated, urban, and female clientele [76–78]. Differences with respect to income between groups suggest that hybrid forms of Ayurveda in the West are part of a "luxury" medicine; their usage is predominantly reserved for people with higher incomes (see Table 1) [79].

This survey investigates the perception of Ayurveda from a convenience sample of therapists and patients of predominantly western backgrounds. Therefore, it cannot define Ayurveda in any absolute term nor does it attempt to compare contemporary with "classic" Ayurvedic perspectives. Nevertheless the results of this survey point to a conception of Ayurveda as Whole Medical System, which also impacts the implementation of Ayurveda, particularly regarding the patient-doctor relationship [80, 81].

Individual forms of spirituality and religion seem to play a key role in the perception and definition of Ayurveda for patients and therapists. In our population adherers of Ayurveda have a tendency to have a special affinity for Buddhism, Hinduism, and South Asian culture in general. Christian religions (e.g., Protestant or Catholic churches) seem to play a less integral role in the practice and perception of Ayurveda, while "traditional" religious beliefs (e.g., a belief in god, angels, and the devil) can be grouped together with South Asian religious beliefs for a majority of the respondents (notably a belief in god, angels, and the devil can also be included in several South Asian belief systems as more recent texts include such concepts). Spirituality and religious aspects appear to be central in individual conceptions of salutogenesis [82, 83] and within the Ayurvedic therapeutic paradigm [84]. Thereby spirituality, not religion, is the preferred self-categorization within the field of Ayurveda. The results pose the question whether individual references to traditional Christian values might have become weaker due to a loss of confidence in established western religious institutions [85, 86]. These values may thus be substituted or supplemented by the individually composed syncretistic realities of patients and therapists using or offering Ayurveda (e.g., combining god, karma, and nirvana), whose religious and spiritual impulses continue to guide them [87].

While both therapists and patients are engaged with religious and spiritual questions and are open to these issues, therapists seem to deal even more with religious and spiritual matters than their patients. Beyond pure somatic healthcare services, adherents of Ayurveda expect the therapist to also function as a spiritual/psychological caregiver. As a result of training and patient expectations, the Ayurvedic therapist also frequently engages in functions (within an Ayurvedic treatment) that are also characterized by religious and spiritual elements, for example, mantra recitation, performing rituals, meditation, prayers, and so forth [88].

Our data support the hypothesis that elements from South Asian culture, religion, and philosophy seem to play an important role for Ayurvedic patients and therapists. A high level of "authenticity" and "authentic therapy" is expected from the therapists and therapies. It is notable that not only therapists but also patients seem to be quite well versed in South Asian culture, religion, and philosophy. This suggests that the choice for Ayurveda might go hand in hand with a fundamental affinity to South Asian culture and worldview [89].

For Ayurvedic patients and therapists, spirituality, religion, and principles of modern science are not in conflict. For them, Ayurveda contains aspects of spirituality, religion, and science at the same time. While spirituality is seen as a very important aspect, which also influences the daily life of therapists and patients, the medical dimension of Ayurveda is still seen as the most important one and does not exclude the simultaneous use of modern medicine for the majority. The composition of Ayurvedic characteristics that is expected from the majority of those participants could be interpreted as a curiosity for novel things and at the same time as an expression of uncertainty and discontent with prevailing structures. Frustration with modern medicine is less important in the decision to use Ayurveda than, for example, the inclusion of the spiritual dimension. An "enchantment of the world," a concept often mentioned in CAM contexts, is supposed to help overcome the separation of matter, mind, and soul. Next to scientific knowledge, spirituality stands on equal footing. Religion in a classical sense seems to take a back seat in favour of spirituality. However, this is to a certain

degree a tenuous position based on the factor analyses related to the second hypothesis of this work.

In our survey Ayurveda is used—as is CAM in general in the western world—by a well-educated, middle class, and female dominated clientele [90, 91]. Women access Ayurveda more often than men among the surveyed participants, and women appear to be more open to religious and spiritual matters [26]. Almost all characteristics related to religiosity and spiritual attitudes are more prominently represented among women in our data set [92].

Ayurveda patients and therapists seem to be more open to CAM, especially nonwestern CAM methods, but this does not exclude the simultaneous use of modern western medicine for the majority of respondents. Moreover, Ayurveda may be compensating for deficits in the field of psychosocial healthcare logistics [93, 94]. In this conception the Ayurvedic therapist does more than simply treat somatic disorders. Ayurvedic concepts are based on anthropologic/cosmological assumptions which include different levels of human existence in both diagnostic and therapeutic healing approaches. As a result, therapist-patient relationships focused on the individual's unique experience and promoting trust and confidential discussion of spiritual matters in the therapeutic encounter are accommodated and indeed cultivated.

There are several limitations of this work. This study was informed by a small sample size rather than a large scale inquiry; thus various nonspecific effects, for example, the inhomogeneous settings, may have contributed to the answer patterns and thus may have significantly biased the results. Further a statistically significant larger fraction of women in both groups is noticeable (which however also reflects the field). Moreover, the partial reporting of the results as pooled data from patients and therapists may bias the picture depending on potentially different attitudes and knowledge about Ayurveda via patients versus therapists. The fact that 15% of patients are also trained as Ayurvedic therapists is a further limitation and a potential source of bias. Another issue may be that the potential simultaneous use of other CAM methods was not assessed by the questionnaire. Another minor limitation is the fact that some of the used items may have had influencing or directing effects due to their wording or an intentional open phrasing. It is also important to keep in mind while interpreting the results that this not a representative population sample but a sample that was likely to be prone to Ayurveda, which of course is another limitation of this study.

To summarize, key questions regarding the character, essence, complexity, and contextualization of Ayurveda in its original and hybrid forms remain largely unanswered. The following questions yet to be answered seem to be of high exigency. (a) What is Ayurveda in general and can a clear definition of it be given independently of western or Indian contexts? (b) What are the reasons for choosing Ayurveda out of a range of different methods of CAM and is the choice for Ayurveda specific or random? (c) What exactly does "spirituality" mean for therapists and patients in the case of Ayurveda? Overall, normative questions about whether Ayurveda is a science or religion or spirituality seem to be deceptive. It might also be helpful to move away from asking whether and to what extent Ayurveda acts in this context and to instead focus more on why and how it functions in association with science, religion, and spirituality. Let us keep in mind that these concepts are not natural entities. Religion, spirituality, and science are modern western concepts and have a strong potential to export normative and ideological items into what are primarily nonwestern contexts [17, 95–97].

Looking at Ayurveda as a whole medical system including physical, psychological, medical, and spiritual elements, as well as a philosophy and a way of life, may challenge the differentiation, compartmentalization, and rationalization of modern societies [98–100], while leading to a better understanding of Ayurveda as an expression of and complement to "modern western medicine."

Given the complexity of the topic and the exploratory nature of the survey, larger surveys with fully validated questionnaires, preceding qualitative phases, and refined hypotheses are warranted to support the results of this first pilot survey.

Conflict of Interests

There are no financial or nonfinancial competing interests to be declared in relation to this paper by any of the authors.

Authors' Contribution

C. Kessler carried out development, design, and implementation of the survey. M. Wischnewsky participated in the design of the survey and performed the statistical analysis. A. Michalsen, C. Eisenmann, and J. Melzer took part in drafting the paper. All authors read and approved the final paper.

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Research Article

Spiritual Needs in Patients Suffering from Fibromyalgia

M. Offenbaecher,[1,2,3] N. Kohls,[3,4,5] L. L. Toussaint,[6] C. Sigl,[1,3] A. Winkelmann,[1] R. Hieblinger,[1] A. Walther,[1] and A. Büssing[7]

[1] *Department of Physical Medicine and Rehabilitation, University Hospital Munich, 81377 Munich, Germany*
[2] *Department of General Medicine, University Clinic IV, 80336 Munich, Germany*
[3] *Generation Research Program, Human Science Center, University of Munich, 83646 Bad Tölz, Germany*
[4] *Division of Integrative Health Promotion, University of Applied Sciences, 96450 Coburg, Germany*
[5] *Brain, Mind & Healing Program, Samueli Institute, Alexandria, VA 22314, USA*
[6] *Department of Psychology, Luther College, Decorah, IA 52101, USA*
[7] *Institute for Integrative Medicine, Faculty of Medicine, Witten/Herdecke University, 58313 Herdecke, Germany*

Correspondence should be addressed to M. Offenbaecher; martin.offenbaecher@med.uni-muenchen.de

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The objective of this study was to assess spiritual needs of patients with fibromyalgia syndrome (FMS) and to evaluate correlations with disease and health associated variables. Using a set of standardized questionnaires (i.e., Spiritual Needs Questionnaire, Fibromyalgia Impact Questionnaire, SF-36's Quality of Life, Brief Multidimensional Life Satisfaction Scale, etc.), we enrolled 141 patients (95% women, mean age 58 ± 10 years). Here, needs for *inner peace* and *giving/generativity* scored the highest, while *existential needs* and *religious needs* scored lowest. Particularly *inner peace* needs and *existential needs* correlated with different domains of reduced mental health, particularly with anxiety, the intention to escape from illness, and psychosocial restrictions. Thirty-eight percent of the patients stated needs to be forgiven and nearly half to forgive someone from their past life. Therefore, the specific spiritual needs of patients with chronic diseases should be addressed in clinical care in order to identify potential therapeutic avenues to support and stabilize their psychoemotional situation.

1. Introduction

The fibromyalgia syndrome (FMS) is a prevalent syndrome characterized by a variety of symptoms such as chronic pain, disturbed sleep, stiffness, fatigue, and psychological distress [1]. These symptoms have substantial impact on many domains of patients' lives. Social and leisure activities, household and outdoor activities are impaired in FMS patients [2, 3], and functional impairments were rated as incriminatory [4]. There is a complex interrelationship between the functional impairment in these areas and psychosocial factors, that is, less social support and higher depressive symptoms predict greater disability [5]; FMS patients with more functional limitations were distressed and reported higher levels of anxiety and depression [6]. The direction of these pathways is difficult to assess as it is well known that both anxiety and depression are not only associated with activity-related discomforts but also related to reduced quality of life [7]. A high proportion of FMS patients report dissatisfaction with their restrictions performing tasks, participating in social and work activities and with their ability to interact with their family and friends [4]. FMS also has a negative effect on the working ability of people on a large scale [8]. In a study by Henriksson [9], 75% reported symptoms that had negatively influenced the work situation and 69% found their work stressful; 52% of those patients who were part of the workforce reported to work shorter than prior to the FMS symptoms, 34% worked at a slower pace, and 38% needed frequent rest periods.

FMS may also affect the family setting and relationships with friends. Marcus et al. [10] reported that 50% of their patients admitted that FMS had mildly to moderately damaged relationship(s) with their spouse(s)/partner(s) or contributed to a break-up with a spouse or partner, and 50%

reported to be not satisfied with their current spouse/partner relationship. Preece and Sandberg [11] found that FMS patients' self reported family stressors, strains, and distress were significantly associated with an increase in health problems as well as functional disability.

In a recent qualitative study [12], FMS patients explained their phenomenal experience related to their suffering as a course of a "giant mess" of unpleasant symptoms, some of which were understood to be symptoms of FMS and some of which were the interactive or parallel effects of comorbid illness. The participants in this study stated that they had to spend considerable efforts at imposing order and sense on complexity and multiplicity, in terms of the instability of their symptoms.

To sum up, FMS patients are challenged to cope, on a wide range, with symptoms and disease consequences affecting many domains of their lives. In fact, patients with chronic pain use a number of cognitive and behavioural strategies to cope with their pain, including spiritual/religious forms of coping, such as prayer, and seeking spiritual support to manage their pain [13]. Studies have shown that spirituality/religiosity (SpR) as a coping strategy was associated with positive affect (mood), but not with pain specific outcomes, while negative religious coping strategies were not associated with any of the outcomes [14].

SpR was identified as a relevant resource to cope even among more secular German patients with chronic pain diseases. Interestingly, SpR was associated with positive disease interpretations such as challenge and value, but not with negative interpretations of disease, while life satisfaction or depressive escape from illness was not significantly associated with measures of SpR [15]. In fact, the increasing utilization of SpR goes far beyond fatalistic acceptance, but can be regarded as an active coping process, even in a secular society [15].

Meanwhile, studies have clearly shown that several patients with chronic diseases have unmet spiritual needs [16]. These needs can be referred to the categories connection/relatedness, meaning/purpose, peace, and transcendence [16]. Balboni et al. [17] found that 72% of US American patients with advanced cancer reported that their spiritual needs were supported minimally or not at all by the medical system, while 47% felt supported minimally or not at all by a religious community, too. Among German patients with chronic pain diseases (predominantly chronic pain diseases and also cancer), several unmet spiritual needs were identified, and these refer to inner peace needs and generative relatedness on a personal level, whereas needs related to transcendent relatedness were of minor relevance [18, 19]. Using the same measure, a similar pattern was found also in patients with chronic diseases (predominantly cancer) from Shanghai [20]. However, in healthy elderly living in residential/nursing homes all these needs scored very low, particularly religious and existential needs, while inner peace needs were of some relevance and needs for giving/generativity were of highest relevance [21]. Thus, one may suggest that spiritual needs related to the categories of relatedness and peace are of higher relevance than transcendent and existential issues—at least in secular societies.

While one may expect that spiritual needs are stated as a result of an experienced lack or loss, it is of interest that particularly existential needs and needs for inner peace were inversely related to spiritual well-being (which indicates a lack or loss), while in contrast religious needs were positively associated (which would indicate that a religious attitude might be a prerequisite to express such needs) [19].

The objective of our study was to assess which spiritual needs were prevalent in a specific and circumscribed sample of German patients with FMS and to evaluate associations between these needs and disease associated variables, mental health associated variables (i.e., anxiety, depression, loneliness, etc.), and measures of life satisfaction and health related quality of life.

2. Patients and Methods

2.1. Participants. A questionnaire battery consisting of the measurement instruments described below was sent to 300 patients, who had been treated in a multidisciplinary rehabilitation program at the department of Physical Medicine and Rehabilitation between 2004 and 2008. This department is a tertiary care center located at the University Hospital in Munich. All patients fulfilled the American College of Rheumatology (ACR) criteria for FMS [1] at the time of inception to the treatment program.

2.2. Self Report Variables. The following sociodemographic variables were collected: marital status, age, level of education, religious orientation. Patients' religious/spiritual self-categorization was measured with two items derived from the SpREUK questionnaire (SpREUK is an acronym of the German translation of "Spiritual and Religious Attitudes in Dealing with Illness"), that is, f1.1. ("To my mind I am a spiritual individual") and f2.1. ("To my mind I am a religious individual") [22]. Thus, we can categorize patients who regard themselves as both religious and spiritual (R+S+), religious but not spiritual (R+S−), not religious but spiritual (R−S+), or neither religious nor spiritual (R−S−).

Data on duration and intensity of symptoms indicative of FMS was collected too. Pain was assessed with a visual analog scale (VAS) of current pain severity, the frequency of severe pain during the last three months, a VAS of pain severity during the last three months, and a Tender Point Score (TPS). The TPS consists of a body image illustrating 24 regions on the back and front, which are commonly indicated as painful by FMS patients. Patients indicate pain intensity by themselves in 24 regions ranging from 0 (no pain) to 5 (extreme pain); the maximum score is 120. Due to missing items (four missing items were acceptable), the TPS was not calculated in 22 patients.

The questionnaire set included the following measures.

2.2.1. Spiritual Needs Questionnaire (SpNQ). To measure patients' spiritual needs, we used the Spiritual Needs Questionnaire (SpNQ) [18, 23] which can be used either as a "diagnostic tool" with 30 items or as a measure with 19 or 20 items which were assigned to four main factors [23].

(1) *Religious needs*, that is, praying for and with others, praying alone, participating in a religious ceremony, reading spiritual/religious books, turning to a higher presence (i.e., God, angels).

(2) *Existential needs* (Reflection/Meaning), that is, reflecting on one's life, talking with someone about the meaning of life/suffering, dissolving open aspects in life, talking about the possibility of life after death, and so forth.

(3) Need for *inner peace*, that is, wish to dwell at places of quietness and peace, plunge into the beauty of nature, finding inner peace, talking with others about fears and worries, being admired by others.

(4) Need for *giving/generativity*, that is, actively and autonomous intention to solace someone, passing along one's own life experiences to others, and to be assured that your life was meaningful and of value.

Patients rate whether they currently have the respective needs (yes/no) and how strong they were to them. The self-ascribed importance was measured on a 4-point scale from disagreement to agreement (0—not at all; 1—somewhat; 2—very; 3—extremely). For all analyses, we used the mean scores of the respective scales described above; the higher the scores, the stronger the respective needs are.

Because some patients did not respond to all items of the respective scales, the mean scores were calculated only when 2/3 or 3/5 of items were present. Thus, the SpNQ scales were not calculated in 6 and 8 persons, respectively.

2.2.2. SpR Attitudes and Convictions in Coping with Chronic Diseases (SpREUK-15). The SpREUK-15 questionnaire measures SpR attitudes and convictions of patients dealing with chronic diseases [22, 24]. It differentiates three factors [22, 24].

(1) *Search* scale, or search (for support/access to SpR), deals with patients' intention to find or have access to a spiritual or religious resource which may be beneficial for coping with illness and with their interest in spiritual or religious issues (insight and renewed interest), and so forth.

(2) *Trust* scale, or trust (in higher guidance/source), is a measure of intrinsic religiosity; the factor deals with patients' conviction that they want to be connected with a higher source and with their desire to be sheltered and guided by that source, whatever may happen to them, and so forth.

(3) *Reflection* scale, or reflection (positive interpretation of disease), deals with patients' cognitive reappraisal of life because of illness and subsequent attempts to change (i.e., reflecting on what is essential in life, to change aspects of life or behavior, looking for opportunities for development, believing that the illness has meaning, etc.).

The SpREUK-15 scores items on a 5-point scale from disagreement to agreement (0—does not apply at all; 1—does not truly apply; 2—do not know (neither yes nor no); 3—applies quite a bit; 4—applies very much). The scores were referred to a 100% level (transformed scale score). Scores >50% indicate higher agreement (positive attitude), while scores <50% indicate disagreement (negative attitude).

The mean scores were calculated only when 3/5 of items were present; thus these scores were not calculated in 4 to 5 persons.

2.2.3. Hospital Anxiety and Depression Scale. The Hospital Anxiety and Depression Scale (HADS) is a brief self-report questionnaire measuring anxiety (7 items) and depression (7 items) [25]. Each item is rated on a scale from 0 to 3, giving a possible score of 21 for anxiety and depression. For either subscales a score of 11 or higher is indicative of a present mood disorder [26]. Due to missing items, the two HADS subscales were not calculated for one patient.

2.2.4. Fibromyalgia Impact Questionnaire (FIQ). The FIQ is an assessment and evaluation instrument developed to measure fibromyalgia patients' status, progress, and outcomes. It has been designed to measure the components of health status that are believed to be most affected by fibromyalgia [27]. A total score of the FIQ is calculated on the basis of physical functioning, number of days felt good, pain, fatigue, morning tiredness, stiffness, anxiety, and depression ranging from 0 to 80, with 80 indicating maximum fibromyalgia impact. Due to missing data, the FIQ score was not calculated in 17 patients.

2.2.5. Quality of Life Scale (QOLS). The QOLS is a 16-item questionnaire adapted by Burckhardt et al. [28] for the use in chronic disease patients, including patients with fibromyalgia [29]. Items are rated on a 7-point Likert scale, whereas higher values denote higher quality of life. Here, the score was calculated for all patients.

2.2.6. Short Form 36 (SF-36). The SF-36 is a 36-item instrument for measuring health status and outcomes from the patient's point of view and has been translated and validated into numerous languages including German [30]. The SF-36 measures the following eight health concepts: limitation in physical activities, limitation in usual role activities, bodily pain, general health perception, vitality (energy and fatigue), limitation in social activities, limitations in usual role activities because of emotional problems, mental health (psychological distress and well-being). Higher values indicate, for example, less limitation, more pain or higher vitality, and so forth. Due to missing data, with respect to the subscales, for up to 3 patients the scores were not calculated; here the two main components (physical and mental health) were not calculated in 9 cases.

2.2.7. Escape from Illness Scale. A depressive intention to run away from the current situation might be an indicator of a patient's struggle with disease and associated with psychosocial and spiritual needs. The three-item scale "Escape" is an indicator of such an escape-avoidance strategy addressing an attitude of fearful insecurity, a tendency to run away from

illness, and the wish that all this could have been nothing more than a bad dream (i.e., "fear of what illness will bring," "would like to run away from illness," "when I wake up, I don't know how to face the day") [31]. In a study involving patients with depressive disorders, we demonstrated that this "Escape" scale correlated strongly with depression, with disease perceptions (appraisals) such as "weakness/failure," and "punishment," and negatively with life satisfaction [32, 33].

The items were scored on a 5-point scale from disagreement to agreement. For all analyses, we used the mean scores of the "Escape" scale based on a scale of 100%. Scores >50% indicate the presence of this attitude, and scores <50% represent a lack of this attitude. The mean scores were calculated only when 2/3 of items were present factor; here the "Escape" scores were not calculated in 24 persons.

2.2.8. Brief Multidimensional Illness Scale (BMLSS). Life satisfaction was measured using the Brief Multidimensional Life Satisfaction Scale (BMLSS) [34]. The items address intrinsic (i.e., myself, life in general), social (i.e., friendships, family life), external (i.e., work situation, where I live) and prospective (i.e., financial situation, future prospects) dimensions of life satisfaction as a multifaceted construct. The internal consistency of the instrument was found to be good in the validation study [34]. This current study used the 10-item version, which includes satisfaction with one's health condition and ability to deal with daily concerns about life (BMLSS-10).

Each of these 10 items was introduced by the phrase "I would describe my level of satisfaction as ...", and was scored on a 7-point scale ranging from dissatisfaction to satisfaction (0—terrible; 1—unhappy; 2—mostly dissatisfied; 3—mixed (about equally satisfied and dissatisfied); 4—mostly satisfied; 5—pleased; 6—delighted). The BMLSS-10 mean score was based on a scale of 100% ("delighted"). Scores >50% indicate higher life satisfaction, while scores <50% indicate dissatisfaction.

The mean scores were only calculated when 7/10 of items were present. The BMLSS-10 scores were not calculated in 5 persons.

2.2.9. UCLA Loneliness Scale. The UCLA loneliness scale is a 20-item questionnaire measuring general feelings of social isolation, loneliness, and dissatisfaction with one's social interactions [35]. The 20 items are rated on a 5-point Likert scale ranging from totally disagree [1] to totally agree [5]. Scores on the scale range from 20 to 100 with higher scores indicating more loneliness. The scale was not calculated for 2 patients.

2.2.10. Catastrophizing Subscale of the Coping Strategy Questionnaire (CSQ). We further administered the catastrophizing subscale of the Coping Strategy Questionnaire (CSQ-catastrophizing) [36]. The CSQ is an instrument that has been used in patients with chronic pain conditions including FMS [37]. The CSQ contains 8 subscales that assess cognitive and behavioural pain coping mechanisms as well as 2 items measuring perceived effectiveness of strategies for controlling and decreasing pain. In our study, we only administered the subscale catastrophizing of the CSQ. Due to missing items (two missings were allowed), the scale was not calculated for 3 patients.

Table 1: Sociodemographic and other characteristics of 141 FMS patients.

Variables	
Gender (%)	
Female	95
Male	5
Age in years (mean ± SD)	57.8 ± 10.2
Disease duration (mean ± SD)	14.1 ± 10.1
Living status (%)	
Living with a partner (married or not)	72.5
Living alone (single, divorced, widowed)	27.5
Educational level (%)	
Low (primary school)/none	42.1
Medium (secondary school equivalent)	36.1
High (high school)	12.0
Other	9.8
Religious orientation (%)	
Christian	73.3
Other	6.0
None	20.7
Spiritual/religious self-categorization (%)	
R+S+ religious and spiritual	18.2
R+S− religious but not spiritual	22.7
R−S+ not religious but spiritual	19.7
R−S− neither religious nor spiritual	39.4

3. Statistical Analysis

SPSS 21.0 was used for the statistical analyses. Missing data was not replaced. Thus, some scales were not calculated for all patients. In a first step of analysis, descriptive analyses (mean, median, and standard deviation) were computed for scales and subscales. Associations between scales were analyzed on the basis of first order correlations (Pearson's r). In a further step, stepwise multiple regression analyses were used to indentify predictors for spiritual needs. P was set to $P < 0.05$, given the exploratory character of the study. With respect to the correlation analyses, we regarded $r > 0.50$ as a strong correlation, an r between 0.30 and 0.50 as a moderate correlation, an r between 0.20 and 0.30 as a weak correlation, and $r < 0.20$ as no or negligible correlation.

4. Results

141 out of 300 patients sent the questionnaires back to the department (response rate = 47%). Sociodemographic variables and other variables are depicted in Table 1. Of importance is the fact that the patients analyzed herein exhibited a high percentage of clinical relevant anxiety (58% of patients with scores greater than 8) and/or depression

(44% of patients with scores greater than 8). In Table 2 the prevalences of selected needs as well as the means, medians, and standard deviations of the subscales of the SpNQ are displayed.

4.1. Spiritual Needs Scores in the Sample. As shown in Table 3, *religious needs* scored significantly higher in patients with a religious attitude (R+S+ and R+S−) and lowest in R−S− patients, while *existential needs* were significantly higher in spiritual individuals (R+S+ and R−S+) and low in R−S−. *inner peace needs* and *giving/generativity needs* were highest in R−S+, although these differences were not statistically significant when compared to the other self-categorization groups.

These scales did not significantly differ with respect to family status (data not shown); the educational level had a significant influence only in trend on the *religious needs*, which were highest in those with a lower educational level ($F = 2.3$; $P = 0.080$). Due to the fact that only 7 men were in the sample, we cannot state any statistically significant effects with respect to gender.

4.2. Correlations between Spiritual Needs and Health Related Variables. Correlation analyses revealed that the spiritual needs were intercorrelated (Table 4), particularly *inner peace* needs correlated strongly with *existential needs*. Both pain scores (tender point score and fibromyalgia impairment) and physical health (SF-36) were either not or just weakly associated with the respective spiritual needs—only *inner peace* needs were moderately associated with fibromyalgia impact (Table 4).

Religious needs correlated strongly with religious Trust, and moderately with spiritual Search, but with none of the health related variables.

Existential needs were moderately associated with the SpREUK scales, with anxiety, escape, and inversely with SF-36's mental health scores.

Inner Peace needs were moderately associated with anxiety, escape, depression catastrophizing, reduced mental health, and SpREUK's reflection scale.

Giving/generativity needs were only weakly associated with the respective measures and subscales, best with bodily pain ($r = -0.26$).

4.3. Predictors of Spiritual Needs. Stepwise multiple regression analyses were used for identifying the most significant predictors (Table 4). The variables which were empirically found to be intercorrelated with spiritual needs included SpREUK's Search, Trust, and Reflection scales, Fibromyalgia Impact scores, anxiety and depression, Escape, loneliness, catastrophizing, life satisfaction, and the SF-36's mental health component.

As shown in Table 5, *religious needs* were predicted best ($R^2 = 0.45$) by religious Trust, with a further positive influence of spiritual Search, fibromyalgia impairment scores, and life satisfaction.

Existential needs were predicted best ($R^2 = 0.43$) by anxiety, with a further impact of spiritual Search and religious Trust.

Inner peace needs were predicted best ($R^2 = 0.29$) by anxiety, and further by the ability to reflect in terms of a positive interpretation of disease.

Giving/generativity needs were explained by several variables ($R^2 = 0.25$), best by low depression scores, and a further positive influence of, however, catastrophizing as a coping strategy, the ability to reflect, and reduced life satisfaction.

4.4. Additional Findings. Semantically similar items, which are not specifically related to SpR but might potentially be of importance for the interpretation of data were collapsed into the following sum scores (Table 2): (1) scale "need for participating" included items N28 ("being more involved in family business"), N29 ("being invited by friends"), and N25 ("being more connected with own family"); (2) scale "need for attention/support" included N1 ("receiving greater care from others") and N30 ("receiving more support from own family"); (3) scale "need for forgiveness" included N16 ("forgive someone from past life") and item N17 ("to be forgiven"). It is important to note that these "sum scores", from a psychometric point of view, are not considered to represent reliable factors of questionnaire instruments, but they are potentially helpful for exploring further associations. Table 6 shows the correlations of the three scales with the other variables, scales, and subscales.

5. Discussion

This study specifically enrolling patients with fibromyalgia confirms previous findings among patients with various chronic pain diseases [19] that secular needs for *inner peace* and *giving/generativity* scored higher than *religious needs* or *existential needs*. In a recent study we investigated the spiritual needs of 392 patients (67% women, mean age 56 ± 14 years; 61% Christian denomination) with chronic pain diseases (86%) and cancer (14%) [19], while in the current study patients with fibromyalgia (95% women, mean age of 58 ± 10 years; 73% Christians) were enrolled. The patients in this study exhibited similar sociodemographic and disease characteristics as well as nonhealth and health related quality of life compared to other FMS samples [29, 38, 39]. In contrast to the sample of various chronic pain diseases and cancer [19], FMS patients' needs scored somewhat higher. One may suggest that the dominance of women in this study (95%) compared to the previous study (67% women) might explain these slightly higher needs scores because the female gender is known to be associated with higher scores of spiritual needs [19].

Moreover, in this study, *existential needs* and *inner peace* needs were correlated moderately with the Escape scale, which was associated in the later study only weakly with *existential needs*. Similarly to the former study, pain intensity or affections itself had no relevant influence on the needs expressed.

Interestingly, particularly the strongly interconnected factors *existential needs* and *inner peace* needs were moderately associated with anxiety, Escape, and reduced mental health, but not with physical health, and only weakly with fibromyalgia associated impairment. In contrast, *religious*

Table 2: Prevalence of needs, mean/median, and standard deviation of subscales as well as frequency of selected items of the SpNQ.

	Prevalence of need (%)		Mean/median of subscales [range 0–3]	SD of subscale
	No	Yes		
Subscales and items				
Religious needs			**0.74/0.50**	**0.77**
N18 pray with someone	82	18		
N19 someone prays for you	75	25		
N20 pray for yourself	42	58		
N21 participate at a religious ceremony	63	37		
N22 read religious/spiritual books	63	31		
N23 turn to a higher presence	49	51		
Need for inner peace			**1.87/2.00**	**0.76**
N2 talk about fears and worries	27	73		
N5 dissolve open aspects of your life**	38	62		
N6 immerse in the beauty of nature	12	88		
N7 dwell at quiet and peaceful places	13	87		
N8 find inner peace	21	79		
N13 have a loving attitude toward others	21	79		
Existentialistic needs (Reflection/Meaning)			**0.89/0.80**	**0.74**
N4 reflect your previous life	40	60		
N10 find meaning in illness and/or suffering	60	40		
N11 talk with someone about the question of meaning in life	58	42		
N12 talk with someone about the possibility of life after death	68	32		
N16 forgive someone from past life	53	47		
Actively Giving			**1.57/1.67**	**0.92**
N15 solace someone	21	79		
N26 pass own life experiences to others	31	69		
N27 know that your life was meaningful and of value	27	73		
Additional items				
Need for participating*			**1.39/1.33**	**0.89**
N28 being more involved in family business	51	49		
N29 being invited by friends	45	55		
N25 being more connected with own family	18	82		
Need for attention/support*			**1.15/1.00**	**1.00**
N1 receiving greater care from others	48	52		
N30 receiving more support from own family	45	55		
Need for forgiveness*			**0.88/0.50**	**1.00**
N17 be forgiven	62	38		
N16 forgive someone from past life	53	47		
N3 being taken care of someone from your community	92	8		
N24 being whole and restored	21	79		
N13 turn to someone in a loving attitude	42	58		
N14 give away something from yourself	23	77		

Prevalence of specific needs follows the self-ascribed yes/no statement (% of the respondents).
*Some items were semantically combined to nonvalidated scales.
**Item was originally part of the scale and was used here again.

Table 3: Spiritual needs and spiritual/religious self-categorization.

		Religious needs	Existential needs	Inner peace needs	Giving/generativity needs
All individuals	mean	0.72	0.88	1.87	1.57
	SD	0.75	0.74	0.75	0.93
R+S+	mean	1.23	1.20	1.84	1.46
	SD	0.79	0.93	0.82	0.93
R+S−	mean	1.07	0.77	1.62	1.62
	SD	0.79	0.65	0.74	0.95
R−S+	mean	0.78	1.22	2.14	1.85
	SD	0.72	0.76	0.62	0.82
R−S−	mean	0.25	0.63	1.90	1.43
	SD	0.36	0.55	0.75	0.96
F value		17.2	6.0	2.3	1.3
P value		<0.0001	0.001	0.085	n.s.

Data refer to 127 to 130 responding patients.

Table 4: Correlation of needs with measures and subscales.

	Religious needs	Existential needs	Inner peace needs	Giving/generativity needs
Spiritual Needs				
Religious	1	**0.459****	0.235**	**0.402****
Existential		1	**0.542****	**0.429****
Inner Peace			1	**0.458****
Giving/generativity				1
SpREUK Subscales				
(spiritual) Search	**0.491****	**0.476****	0.217	0.165
(religious) Trust	**0.570****	**0.387****	0.113	0.238**
Reflection (positive interpretation of illness)	0.113	**0.339****	**0.312****	0.230**
Fibromyalgia Impact (FIQ)	0.138	0.228	0.297**	0.234
Tender point count	0.129	0.071	0.115	0.152
Anxiety (HADS)	0.055	**0.350****	**0.473****	0.217
Depression (HADS)	−0.076	0.238**	**0.300****	−0.030
Escape from illness	0.029	0.294**	**0.412****	0.194
Loneliness (UCLA)	0.135	−0.181	−0.234**	0.009
Catastrophizing (CSQ)	−0.003	0.287**	**0.359****	0.219
Quality of life				
Life satisfaction (BMLSS-10)	0.086	−0.138	−0.263**	−0.037
Quality of life scale (QOLS)	−0.007	−0.207	−0.267**	0.005
SF-36 Physical score	−0.160	0.046	0.065	−0.155
SF-36 Mental sum score	0.000	**−0.334****	**−0.430****	−0.103
SF-36 Physical functioning index	−0.125	−0.025	−0.013	−0.138
SF-36 Role-physical index	−0.108	0.040	−0.151	−0.129
SF-36 Bodily pain	−0.112	−0.056	−0.150	−0.258**
SF-36 General health perceptions index	−0.102	**−0.335****	−0.198*	−0.120
SF-36 Vitality	−0.078	−0.122	−0.224**	−0.080
SF-36 Social functioning	−0.024	−0.192	**−0.322****	−0.083
SF-36 Emotional role	0.042	−0.239**	**−0.316****	−0.130
SF-36 Mental health	−0.081	**−0.315****	**−0.423****	−0.174*

$^{**}P < 0.01$ (Pearson; 2-tailed); significant correlations with $r > 0.30$ were bold.

Table 5: Regression analyses with spiritual needs as dependent variables (stepwise method).

	Beta	T	P	Collinearity statistics*	
				Tolerance	VIF
Dependent variable: religious needs (R^2 = 0.45)					
Model 4					
(constant)		−3.086	0.003		
Trust (SpREUK)	0.442	4.643	0.000	0.693	1.443
Search (SpREUK)	0.282	3.004	0.003	0.711	1.407
Fibromyalgia impairment (FIQ)	0.372	3.560	0.001	0.576	1.736
Life satisfaction (BMLSS-10)	0.269	2.601	0.011	0.589	1.696
Dependent variable: existential needs: reflection/meaning (R^2 = 0.43)					
Model 3					
(constant)		−1.066	0.289		
Search (SpREUK)	0.339	3.514	0.001	0.686	1.458
Anxiety (HADS)	0.415	5.013	0.000	0.932	1.073
Trust (SpREUK)	0.251	2.568	0.012	0.670	1.493
Dependent variable: peace needs (R^2 = 0.29)					
Model 2					
(constant)		5.500	0.000		
Anxiety (HADS)	0.446	4.940	0.000	0.965	1.036
Reflection (SpREUK)	0.234	2.592	0.011	0.965	1.036
Dependent variable: Giving/Generativity (R^2 = 0.25)					
Model 5					
(constant)		3.257	0.002		
Reflection (SpREUK)	0.285	2.941	0.004	0.914	1.094
Catastrophizing (CSQ)	0.319	2.349	0.021	0.467	2.143
HADS Depression (HADS)	−0.682	−3.915	0.000	0.283	3.533
Life satisfaction (BMLSS-10)	−0.310	−2.310	0.023	0.477	2.095
HADS anxiety (HADS)	0.290	2.002	0.048	0.411	2.436

*Because the regression coefficients may be compromised by collinearity, we checked the Variance Inflation Factor (VIF) as an indicator for collinearity. VIF > 10 is indicative of high collinearity.

needs and also *giving/generativity* were not significantly associated with health associated variables. This suggests that *religious needs* may be expressed because of a reliance on religiosity as a resource to deal with life concerns, as a matter of trust in God who carries through, and not necessarily because of an impaired life satisfaction. In fact, religious Trust was identified in this study as the best predictor of *Religious needs*, with a further impact of spiritual Search, fibromyalgia associated impairment, and life satisfaction.

Also in this study, anxiety was the best predictor of *Existential needs* and *Inner Peace* needs. Interestingly, spiritual Search and religious Trust were contributing variables to *existential needs*, while for *inner peace needs* only the ability to reflect in terms of a positive interpretation of illness was a further contribution variable. This specific pattern is plausible from a theoretical point of view because reflecting previous life, finding meaning in illness and suffering, talking with someone about the question of meaning in life and the possibility of life after death, and also to forgive someone from the past life are existential needs which may have a spiritual or even religious connotation. In contrast, to immerse in the beauty of nature, to dwell at quiet and peaceful places, finding inner peace, and having a loving attitude toward others on the one hand, and talking about fears and worries and trying to dissolve open aspects of life on the other hand, are needs which may result in states of inner peace and release, but they are not necessarily religious issues.

The dependent variable *giving/generativity* was predicted best by low depressive symptoms, and also by the ability to reflect on what is essential in life, how to change attitudes and behaviour, and by other variables. This factor clearly points to patients' intention to be assured that life is meaningful and of value, that one is nevertheless able to solace someone, and able to pass along one's own life experiences to others. Here the dimension of generative relatedness is connected with an existential, meaning making issue.

5.1. Interpretation of Additional Topics: Forgiveness. Forgiveness can be both a secular existential istic and a religious issue, depending on the individual context. As a result of such processes of forgiveness, inner peace states may occur. Nearly half of the patients in our sample had the need to

Table 6: Correlation of needs with measures and additional subscales.

Scales and subscales	Need for participating	Need for attention/support	Need for forgiveness
Pain and mental health			
Fibromyalgia impact (FIQ)	**0.334****	**0.342****	0.154
Tender point count	0.248**	0.223	0.043
HADS anxiety	0.243**	**0.434****	0.257**
HADS depression	0.159	**0.379****	0.126
Escape from illness	0.201	**0.338****	0.112
UCLA loneliness scale	−0.007	**−0.340****	−0.100
CSQ-catastrophizing	**0.308****	**0.395****	0.159
Quality of life			
Life satisfaction (BMLSS-10)	−0.065	**−0.280****	−0.075
Quality of life scale (QOLS)	−0.145	**−0.339****	−0.139
SF-36 Physical sum score	−0.153	0.001	0.084
SF-36 Mental sum score	−0.234**	**−0.501****	−0.223
SF-36 Physical functioning	−0.152	−0.102	0.032
SF-36 Role physical	−0.177	−0.225	0.048
SF-36 Bodily pain	**−0.304****	**−0.310****	−0.050
SF-36 General health perception	−0.271**	−0.218	−0.235**
SF-36 Vitality	−0.286**	−0.270**	−0.034
SF-36 Social functioning	−0.144	**−0.340****	−0.163
SF-36 Emotional role	−0.203	**−0.445****	−0.212
SF-36 Mental health	−0.282**	**−0.481****	−0.168

Significant correlations with $r > 0.30$ were bold.
**$P < 0.01$ (Pearson).
TPC: tender point count. VAS: visual analogue scale; QOLS: quality of life scale; FIQ: fibromyalgia impact questionnaire.

forgive someone from their past life, and 38% to be forgiven. Having these needs was weakly associated with anxiety and negatively with SF-36's mental health component. Although open conflicts in life which may require forgiveness can be associated with mental health affections, we cannot draw any causal conclusions. Longitudinal studies addressing this issue are required.

Nevertheless, these findings fit to the model proposed by Toussaint et al. [40] that in patients with fibromyalgia forgiveness can serve as a crucial coping resource that may have direct effects on mental and physical health, as well as effects on health through affective control mechanisms and control of central sensitization and dysregulation. Research indicates that forgiveness may have soothing effects on the sympathetic nervous system (e.g., [41], and may offer some potential benefits for assuaging the damaging effects of stress hormones such as cortisol [42–44]). Furthermore, the findings confirm patient benefits from forgiveness in other patient populations [45–49].

Moreover, these results show that FMS patients—like other patients with chronic diseases, too—may have prevalent needs to forgive and be forgiven, and this is consistent with the only other known study of forgiveness needs in chronic illness. In his study, Barry [50] found that when cancer patients were asked during a new patient orientation program about their need to forgive a prior healthcare professional, God, themselves, or others, 39% reported forgiveness issues that needed to be addressed and half of these people reported high to severe forgiveness concerns. In a second study that used an anonymous response format, the percentage of patients reporting forgiveness issues rose to 61% and approximately half of those reported high to severe forgiveness concerns. Taken together, the data from the present study and that of Barry's suggest that forgiveness needs in chronic illness are surprisingly common, and that forgiveness needs in FMS patients may be similar to those in cancer patients. Barry's work suggests [50] that unfortunately patients are reluctant to communicate these needs to their healthcare providers; one may assume a similar effect also for patients with chronic pain diseases. On the other hand, an alternative explanation refers to cancer patients' experience that their life time might be limited, and thus existential issues are of higher importance to them when compared to patients with chronic pain diseases [18] who often have to learn to live with their disease. Nevertheless, given the high needs of patients in the realm of forgiveness, it behoves medical professionals to become better adept and inquiring about these needs and offering appropriate education, intervention, or referral. Several options for psychoeducational forgiveness training exist (see [40]) and methods specifically tailored to healthcare settings are being developed [50].

5.2. Interpretation of Additional Topics: Participation and Support. More than half of the patients indicated a need for more participation in social activities and support by family and others. Particularly the needs for attention and support were moderately associated with a variety of disease as well as psychosocial variables, including anxiety and depression,

loneliness, and daily life affections through the pain. According to Eisenberger and Lieberman [51] there is increasing evidence from animal and human neuroimaging studies suggesting that physical and social pain overlap in their underlying neural circuitry and computational processes. It has also been suggested that the social-attachment system borrowed the computations of the pain system to prevent the potentially harmful consequences of social separation. Eisenberger and Cole [52] even made the point that it is possible that long-term experiences of social disconnection (loneliness) or connection (social support) may fundamentally alter the function and connectivity of the neural systems, consequently affecting how they relate to health relevant physiological outputs.

In qualitative studies, FMS patients repeatedly report that being stigmatized was an outstanding theme [53, 54]. They described perceptions of being left alone with their illness, due to a lack of understanding and acceptance from others. As a result of stigmatization, FMS patients withdraw from several areas of social life [55], further enhancing the feeling of being worthless and of loneliness. Therefore, it is conceivable that FMS patients express a need to participate and be cared for and this need to be more connected with others is also underpinned by the high prevalence of the needs to turn to someone in a loving attitude and to solace someone in our sample. Feeling connected, giving and receiving support is an important part of human life and it has recently been demonstrated that individuals who interact more with close, supportive, and comforting individuals on a daily basis show reduced neurocognitive and physiological stress reactivity to a social stressor [56]. The authors of that study concluded that this reduction in stress responses, over time, may result in better health outcomes.

5.3. Limitations. Some limitations of our study need to be addressed. The FMS patients were recruited in a tertiary referral center and all of them participated in the past in a multidisciplinary treatment program which also included elements of psychosocial education and emotion control. The response rate in our study was 46%; we are not able to compare the responders to the nonresponders. Of course one cannot exclude the possibility that particularly those who have no interest in spiritual/religious issues may have not responded to the questionnaires, and thus our results might be too positive for religious patients. However, 59% of the patients would not regard themselves as religious—and this amount is consistent with previous findings among patients with chronic pain diseases [15, 19]. Finally, our patient group had a long history of FMS related symptoms and high levels of pain and other symptoms as well as functional limitations. Therefore, the question remains whether we would find similar results in nonpatients (i.e., FMS patients in the population who have not sought health care). However, when compared to data of a previous study among patients with chronic pain conditions, the pattern and level of spiritual needs were similar [19].

5.4. Outlook. Clearly there are high proportions of FMS patients who have specific spiritual needs. But where are those met? The current health care system is based on the biomedical model which has changed the focus of medicine from a caring, service-oriented model to a technological, cure-oriented model [57].

There are several studies showing that emotional, social, and spiritual issues in the doctor-patient encounter are often not addressed and/or discussed [58–61]. Ellis et al. [62] performed a qualitative study with family physicians and identified several barriers to spiritual assessment, including a physician's upbringing and culture, lack of spiritual inclination or awareness, resistance to exposing personal beliefs, and belief that spiritual discussions will not influence patients' illnesses or lives. The participants also postulated patient barriers, including fears that their physician might judge them for their spiritual views or consider their raising spiritual questions inappropriate. Further barriers were indicated in a recent investigation by Vermandere et al. [63] such as lack of formal training and appropriate strategies as well as lack of time. Many physicians in that study saw it as their role to identify and assess patients' spiritual needs, despite perceived barriers. However, they struggled with spiritual language and experienced feelings of discomfort and fear that patients will refuse to engage in the discussion. The latter seems to be incomprehensible insofar that the result of our study and the results of others [64–66] indicate that a great proportion of patients have a great need for spiritual issues to be addressed in the medical encounter.

However, there is also growing interest in medicine to include spiritual or compassionate care in order to serve the whole person—the physical, emotional, social, and spiritual. Family physicians view spirituality as a significant dimension of human experience that embraces sustaining and enlivening relationships with spirit and the pursuit and expression of meaning and purpose [67]. The World Health Organization already reported 1998 (quoted in [68]): "Until recently the health professions have largely followed a medical model, which seeks to treat patients by focusing on medicines and surgery, and gives less importance to beliefs and to faith in healing, in the physician and in the doctorpatient relationship. This reductionist or mechanistic view of patients is no longer satisfactory. Patients and physicians have begun to realize the value of elements such as faith, hope, and compassion in the healing process." Larry Culliford, a UK psychiatrist, summarized it as follows [68]: "Many see religion and medicine as peripheral to each other, yet spirituality and clinical care belong together. The time is thus ripening for doctors to recall, reinterpret, and reclaim our profession's sacred dimension." And we would like to add: "... in order to recognize and to address our patients' spiritual needs".

6. Conclusion

Evidently, a high proportion of FMS patients indicated specific spiritual needs in different domains which were associated particularly with anxiety and specific psychosocial restrictions. Therefore, these needs should be addressed in clinical care in order to identify potential therapeutic avenues to support patients' coping with illness.

Conflict of Interests

Dr. Winkelmann was investigator in a study of pregabalin in FMS, sponsored by Pfizer.

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Research Article

Compassionate Love as a Predictor of Reduced HIV Disease Progression and Transmission Risk

Heidemarie Kremer,[1] Gail Ironson,[1] Lauren Kaplan,[1] Rick Stuetzle,[1] and Mary A. Fletcher[2]

[1] *Department of Psychology, University of Miami, FL, USA*
[2] *Department of Medicine, University of Miami, FL, USA*

Correspondence should be addressed to Heidemarie Kremer; heidemariekremer@yahoo.de

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Objectives. This study examined if compassionate love (CL) predicts HIV disease progression and transmission risk. Scientific study of CL emerged with Underwood's working model of other-centered CL, defining five criteria: free choice, cognitive understanding, valuing/empowering, openness/receptivity for spirituality, and *response of the heart*. *Method*. This 10-year cohort study collected 6-monthly interviews/essays on coping with HIV and trauma of 177 people with HIV in South Florida. Secondary qualitative content analysis on other-centered CL inductively added the component of CL towards self. Deductively, we coded the presence of the five criteria of CL and rated the benefit of CL for the recipient on a 6-point Likert scale. Growth-curve modeling (reduced to 4 years due to cohort effects) investigated if CL predicts CD4 slope (HIV disease progression) and cumulative viral load detection (transmission risk). *Results*. Valuing/empowering and cognitive understanding were the essential criteria for CL to confer long-term benefits. CL had a higher benefit for recipients if given out of free choice. High scores of CL towards self were reciprocal with receiving (93%) and giving (77%) other-centered CL. Conversely, those rated low on CL towards self were least likely to score high on receiving (38%) and giving (49%) other-centered CL. Growth-curve modeling showed that CL towards self predicted 4-year cumulative undetectable viral load (independent from sociocultural differences, substance use disorder, baseline CD4 and viral load). Those high versus low on CL self were 2.25 times more likely to have undetectable viral load at baseline and 1.49 times more likely to maintain undetectable viral load over time. CL towards self predicted CD4 preservation after controlling for differences in CL giving. *Conclusions*. CL towards self is potentially the seed of being expressive and receptive of CL. Health care professionals prepared to walk the extra mile for those who neglect and isolate themselves may break a vicious circle since those lacking CL self were least likely to receive CL from others. Future studies should examine whether any enhancement of CL towards self may translate into slower disease progression and reduction of transmission risk.

1. Introduction

A couple of decades ago, research on compassionate love (CL) seemed "conspicuous by its absence" (p. 2) [1]. Medical research in this area is scarce. Entering the keywords compassionate love in PUBMED yields only 24 publications, four of which address HIV care, since the topic emerged with the AIDS epidemic. The first PUBMED listed publication is from Uganda in 1989, in which Nelson Sewankambo opined that CL may be the essential clinical skill to be trained to improve the quality of life of people living with HIV (PLWH) [2]. Ten years later, the term surfaced as a topic of scientific interest in the US after a 1999 conference at the Massachusetts Institute of Technology brought together several key theorists and researchers to edit a compendium on altruistic love [3]. CL is closely related to but not synonymous with concepts such as altruistic love, unlimited love, romantic love, unconditional love, and agape (p. 72) [3, 4]. In the World Health Organization (WHO), the term first emerged on World AIDS Day 1994, when the Director General of the WHO called upon families of human kind (including health and spiritual caregivers, people living with HIV and their advocates and

networks) together to give compassionate care and love to PLWH [5]. The WHO summoned health professionals with both religious and nonreligious backgrounds in a working group, on the role of spirituality in quality of life, to develop a cross-cultural quality of life assessment tool for PLWH [6]. Cultural discordances emerged as the Buddhists preferred the term "compassion" instead of "love" and the Muslims argued that compassion was too "cold" and that "love" was the necessary term, "compassionate love" was the compromise term to portray the spiritual aspect of quality of life (pp. 8-9) [4].

Since 2001, the scientific study of CL has received support from the Fetzer Institute, and the study presented here is one of the selected projects made possible through this funding [7]. Based on interviews with Trappist monks [8], Underwood defined the term CL as "love that centers on the good of the other." CL can be expressed through in attitudes, actions, words, and body language, including altruism, helpfulness, genuine concern, empathy, and other elements that are commonly shared by the diverse concepts of love [8]. Furthermore, Underwood defined five basic criteria of CL: *free choice* for the other; some degree of accurate *cognitive understanding* of the situation—the other and oneself; *valuing/empowering* the other at a fundamental level; *openness and receptivity for spirituality* and *response of the heart* [8]. Detailed definitions and examples of those five criteria of CL are depicted in Table 1. It is unclear if those criteria are all essential for CL to be expressed, and it is unknown how much each criterion contributes to the benefit of CL for the recipient [3, 4, 8].

Our structural framework of "Compassionate Love and Health in People with HIV" as illustrated in Figure 1 is based on the "Working Model of Compassionate Love" of Underwood (p. 76, italic fonts in Figure 1) [3], supplemented by our own HIV research and findings of others. According to Underwood (p. 76) [3], the motivation and discernment to express CL are based on the individual variations in the person's personality, biology, development, and situational factors, nested within and shaped by the sociocultural environment. CL increases the possibility of positive behavior, resulting in a positive feedback loop changing the substrate of CL, which is constituted by the individual biography and the sociocultural environment. Conversely (not shown in Figure 1), inappropriate or no actions of CL result in negative behavior limiting the person's ability of expressing CL. Underwood also emphasized that CL can be expressed by making space for others or the "divine" to give (p.76) [3], which can in turn foster a person's capacity to express love to others (p. 75) [3]. According to her, CL is a dynamic process that involves feedback loops in which the expression of CL can expand the capacity to love of both the person giving and the person receiving. Hence, the dynamic process of CL can best be examined in a longitudinal design.

For example, our longitudinal research in PLWH showed that caring behavior for others (rated from essays about stressful or traumatic situations) predicted slower HIV disease progression as indicated by biological markers, such as CD4-cells and viral load (VL), and giving to charities predicted better VL control over two years, even after controlling for baseline differences on CD4 and VL counts [9]. In addition, a study of Ramirez-Valles and Brown [10] suggests that volunteering in AIDS organizations results in an increase in self-esteem, sense of empowerment, and safer sex behaviors in people with HIV.

CL can also be received from a personal relationship with a Higher Power/God. For example, our own research showed that individuals that felt "chosen by a Higher Power" to have HIV were more likely to view their HIV diagnosis as a spiritual transformation that changed their attitudes, beliefs, behaviors, and their spirituality towards a life fulfilled with CL [11]. In addition, people who viewed God as loving and felt that God loved them had slower disease progression [12]. Conversely, people who viewed God as harsh punishing, and unforgiving had faster disease progression, even after control for baseline CD4 and VL counts, health behaviors, mood, coping, and social support [12]. Additionally, individuals viewing HIV as a punishment of God may perceive themselves as unworthy, needless, unloved, and rejected [11, 13, 14], which in turn may foster isolation, leading to a vicious circle of limited opportunity to express and feel CL.

At the center of the model are motivation and discernment (see Figure 1). For example, if someone who is HIV-positive joins a volunteer organization with the ultimate aim to get back to work despite HIV, it would not count as an act of giving CL to others, since the motive is not centered on the good of the other. Joining a volunteer organization may result in positive health behavior, such as giving up drugs/alcohol or better medication adherence and improved health, which is in turn a substrate of CL. CL involves discerning and balancing competing factors to prevent well-intentioned actions that would harm the other or oneself. For example, someone in an HIV-discordant partnership has to weigh many competing factors in family planning related to one's own health and the health of the partner and child. According to Seelig and Rosof [15], CL towards others can be completely altruistic and an act of selflessness, self-sacrifice (and thus self-injury), and it can be selfish because one may expect something, yet CL also may mean also to respect the own capacities and to "see" the others as they are.

Underwood's definition of CL is confined to giving and receiving other-centered CL (p. 75-76) [3]. However, the inductive data analysis of the first twenty interviews of PLWH discovered that compassionate self-love is a core component of the full expression of CL. As Underwood suggested, discerning the appropriate expression of CL requires us to balance our own needs with those of the other (e.g., putting the oxygen mask on oneself in an airplane emergency maximizes the benefit to self and others) p. 15 [4]. This balance dovetails with the biblical principle of "loving one's neighbor as oneself." In other-centered selfless CL, a power balance between giving and receiving is essential to prevent giving from becoming a "one-way-street," whereas in self-centered CL giving and receiving is always balanced.

Based on this structural framework (Figure 1), the purpose of the present study is to examine the five criteria of CL in all the components (giving, receiving, and self) to determine whether CL translates into positive health behavior to prevent HIV disease progression and transmission

Table 1: Five criteria of compassionate love (CL definitions and examples) for each component (giving, receiving, and self).

Criterion	Definition	Example-giving	Example-receiving	Example-self
Free choice	Making a deliberate choice to give oneself for the good of the other/self without having any specific reason or obligation to do so.	"Teaching is what I am supposed to be doing and this is my way of giving back" describes someone's passion for teaching.	"He's there for me always" states someone, who experiences the friend of his diseased father as a "real friend" and truly helpful.	"I decided I have to do something or I'm going to get really sick" describes a participants' reaction to the deaths of many people from AIDS.
Cognitive understanding	The ability to understand the situation, the other, and oneself. This requires the ability to distinguish between the needs, feelings, and wants of the other and oneself.	"I am watching and I am an integral part of people's lives, changing their lives and adjusting them." describes a teacher. "The kids believe in me because I am very honest"	A HIV-positive partner offers a special insight. "We can talk about anything and everything. He lets me know if I'm doing something right or wrong."	"I am feeling so good now" rejoices a participant "Little by little it (engagement in psychotherapy) was helping me to understand me, where I'm coming from, and to understand better the others."
Valuing/empowering	Expressing respect and love for the other/self rather than pity. Central criterion is the enhancement of the recipient's self-efficacy and development.	After being diagnosed with HIV, participant founded a support group aiming "to provide emotional, educational, and social support to the HIV community."	Participant describes the help of her new boyfriend as follows: "He boosts my self-esteem and is intellectually challenging."	"It's a challenge, this changes all of your life", a participant describes his benefit seeking from HIV by using different empowering resources, for example, psychotherapy and education.
Openness and receptivity for spirituality	The spiritual awareness of being part of something important beyond oneself and feeling connected to a higher presence. Being open and receptive for the so-called "inspired" quality of CL.	Someone who believes in reincarnation and karma states "There is a lesson in everyone's lifetime. Now (after HIV diagnosis) I know my lesson. I'm here to help others walk the path, to help them get through this. We all have a purpose of giving back to the universe."	Participant feels really close to "the Lord" and participant is religious, engaged in different church activities and feels empowered by her church: "A minister in the church put me on his prayer line."	Despite multimorbidity, someone is full of hope and confidence: "Because I've accepted this and I have hope and faith in God."
Response of the heart	The affective and emotional dimension of CL. Empathy motivates to help others/self.	A woman remembers the first moments after being diagnosed with HIV-diagnosis: "There was no place for me to go." To help others with the same destiny, she founded a support group.	Participant's brother was an alcoholic but is sober now and supports his brother: "Matter of fact he came by to sit in on one of my AA meetings."	"When you see the despair and depths of cruelty people have gone through to survive, then we should be so thankful" a woman describes her gratitude and satisfaction "to have a decent place to live, food, just the basics that most Americans take for granted."

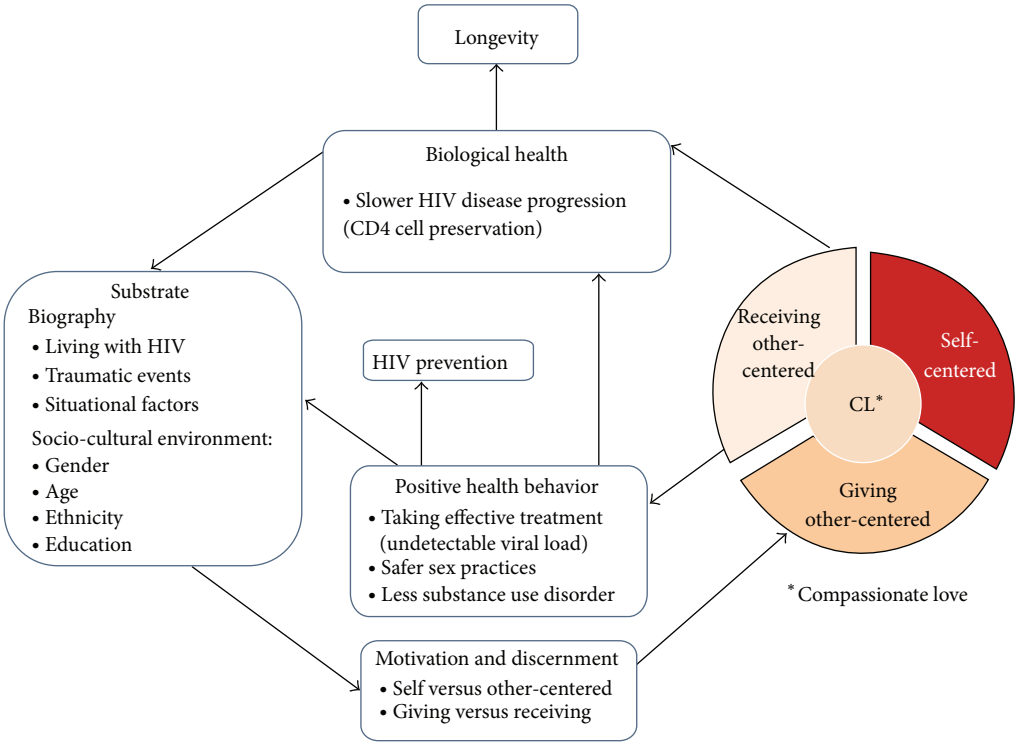

Figure 1: Compassionate love (CL) and health in people living with HIV (PLWH). The framework of our study is based on Underwood's working model of CL (italic font) (p. 76) (p. 76) [3] and our analysis of the individual biographies of 177 PLWH. Using hierarchical linear modeling [33], we test if CL (giving, receiving, and self) predicts positive health behaviors preventing HIV disease progression and transmission, contributing to better biological health, independent of sociocultural factors. A survival analysis examining the link between CL and longevity will follow [17].

risk. Analyzing our ten-year collection of interviews and essays [9, 12, 16, 17], we provide refined definitions in an inductive and deductive approach using qualitative content analysis. We contribute anchor examples for each of the five criteria of CL and establish their frequency and their contribution of the benefit to the self or others. Using exploratory analysis, we calculate the extent to which each component of CL contributes to the full expression of CL. Positive health behavior is indicated by safer sex, absence of substance use disorder, and achieving an undetectable VL. Since achieving an undetectable VL requires >95% adherence and reduces HIV transmission by 96%, we use this parameter as a biological indicator of adherence as well as reduced transmission risk [18]. Slower HIV disease progression is measured by immune preservation as indicated by the CD4 cells changes over time. We test our predefined hypothesis, as postulated in Figure 1, that each component of CL is related to long-term health-preventive behavior (taking effective treatment to achieve undetectable VL, lower risk of substance use disorder, and safer sex behavior) resulting directly and indirectly into slower HIV-disease progression (CD4 cell preservation) and lower HIV transmission risk (cumulative undetectable VL). Finally, we discuss the clinical implications of our results that may be applicable to other diseases as well. Another future analysis will examine the association between CL and longevity (in preparation).

2. Method

In our longitudinal study on the psychosocial and spiritual factors related to health and longevity with HIV, we followed 177 people with HIV intensively for up to ten years [12, 15, 16]. In this secondary data-analysis, we transcribed one interview of the most traumatic time point within the first three years of study entry and summarized all other available interviews and essays of the 177 participants. We used a mixed method approach, applying qualitative content analysis (inductive and deductive) to code the presence of the five criteria of CL within all three components (giving, receiving, and self) and to rate the benefit of CL for the recipient on a 6-point Likert scale. Quantitative variables were then derived from frequencies of these codes and ratings. Hierarchical regression analysis determined the explanation of variance of the full expression of CL for CL giving, receiving, and self. Growth-curve modeling, a type of hierarchical linear modeling, tested our working model (see Figure 1) to examine if CL (giving, receiving, and self) predicts CD4 cell preservation and cumulative undetectable VL. Although we have up to ten years qualitative data, we were only able to predict the biological outcomes over four years due to the cohort effect.

2.1. Study Population and Sampling. From 1997 to 2000, our study recruited 177 people with HIV via flyers (distributed

through doctors' offices, community events, support groups, HIV organizations), newspaper ads, and word of mouth. Participants were diverse with respect to gender (30% female), age (mean age 37.49 ± 8.88 years), ethnicity (36% African American, 31% White (non-Latino), 28% Latino), and sexual orientation (45% heterosexual). Despite 68% attending further education beyond high school, most participants were relatively poor with 60% living on less than $10k annual income, which is consistent with their high unemployment (15%) and disability (42%). The entry criteria selected those in the midrange of HIV disease (150–500 CD4-cells/mm^3, CD4-nadir >75 cells/mm, no prior AIDS-defining symptoms or HIV associated dementia), because we hypothesized that psychological factors would have maximum impact at this disease stage. To reduce unreliability or confounders for immune response, we excluded people with active substance use disorder and/or psychosis (based on the Structured Clinical Interview, DSM-III-R [19]).

2.2. Procedures. The study was IRB approved; all participants gave informed consent and received $50 compensation per visit. From 1997 to 2007, we collected in-depth data interviews and essays in six-month intervals, asking how they cope with HIV and other life traumas as well as their safer sex practices. At every time-point, participants completed a comprehensive set of questionnaires including sociodemographics and health behaviors and gave blood and urine samples for biological measurements [12, 15, 16].

Transcriptions and in-depth qualitative data analysis took place from 2009 to 2012. We fully transcribed the interview of the time-point with the highest negative rating (closest to −3, very stressful) on the life-event scale [20, 21] during the first three years of study which also served as the basis of our analysis of spiritual coping with trauma [18, 22]. Beside this interview/essay, a team of ten trained transcribers summarized the content of all other interviews and essays for up to ten years. For some participants, more than one interview was fully transcribed if it contained relevant information for inductive coding. All transcripts were quality controlled, entered in the qualitative software atlas.ti, and rated using directed qualitative content analysis [23–25]. For further statistical analysis, the 15 codings and three ratings were aggregated and transferred into SPSS version 19. HLM software version 6.03 was used for the hierarchical linear modeling.

2.2.1. Interviews and Essays. In the initial interview, we explored how participants believed they got HIV and how they reacted to their diagnosis. At the initial and every follow-up interview, we asked to whom they disclosed their HIV status (and if gay, their sexual orientation) and how the reaction was; how their life changed since the diagnosis; how they spent their daily life; which activities they looked forward to; if they had a partner, were sexually active, practiced safer sex, and disclosed their HIV status to their partners; if and how their partners were helpful to them and if they had someone to take care of them if needed and to share their deepest feelings with; and if they had partners or friends who died from AIDS and how they reacted. Other questions tapped into their spiritual beliefs, beliefs about death and dying, afterlife, and life expectancy. We asked how they found their physician and if they were satisfied with their medical care; what they were doing to keep themselves healthy; what percentage of their well-being was due to their own attitudes and behaviors versus medical care; if they were getting complementary or alternative treatment; and if they were taking prescribed medication and the reason behind it. Finally, we asked about what enabled them to keep going in the face of HIV and if anything positive had resulted from being HIV-positive or anything else was relevant to maintaining their health in the face of HIV. In addition, interviews and essays captured how they coped with the most difficult life event over the past six months.

2.3. Qualitative Content Analysis of Compassionate Love. Figure 1 describes theoretical framework of our content analytic approach. Each time a full transcript of one or more interviews and a detailed summary of all other essays/interviews was completed, the transcriber worked with the research team inductively line by line through the entire transcript to highlight quotes and anchor examples. The text passage quote was the smallest unit of our analysis to develop a categorization system. Deductively, we coded the five criteria of CL derived from Underwood's basic theoretical mode of CL [3, 4, 8]. Inductively, we searched for additional components of CL and a method to rate the benefit of CL for the recipient.

After analyzing 20 transcripts, inductive coding revealed that CL towards self was an additional component of CL that should be included in the ratings (see Section 1). After more than 50 interviews, we reached a point of saturation and compiled tentative definitions for the coding of the presence of the five criteria for each component of CL, giving, receiving and self. Each interview underwent 15 codings, grounded in at least one characteristic quotation, which are explained in Table 1. Further, we developed a 6-point Likert scale rating for the benefit of CL for the recipient (ranging from 1 = CL *negative or harmful* to 6 = CL *is a central element in the person's life*), which was based on the overall coding of the transcript. Table 2 explains the rating of the benefit of CL for the recipient with characteristic anchor examples for CL (giving, receiving, and self). The main purpose of Tables 1 and 2 was to provide an explicit coding agenda with definitions and examples to illustrate under what circumstances a quoted text passage can be coded/rated [24, 25].

Next, ten raters established independent interrater reliability by coding and rating the first twenty interviews. For each Cronbach's alpha < .80, definitions were revised. Using the revised versions, two raters established chance-corrected interrater reliability for additional 20 interviews. The fine-tuned definitions of the codes of the five criteria had substantial reliability (Cohen's Kappa above .60), and reliability of the rating of the benefit of CL was excellent (Kendall's tau $B = .81$, $P < .001$) [26]. Finally, all 177 transcripts were fully analyzed independently by two raters and any discrepancies were either consensually agreed or discussed in the team.

Table 2: Compassionate love components (CL giving, receiving, and self): Rating, definition, and anchor examples.

Rating and definition	Example-giving	Example-receiving*	Example-self
1 CL negative or harmful	A participant, who does not disclose his HIV status and has unprotected sex, describes: "I feel like just having sex with him just to give it (HIV) to him because of the way he used to talk about people with it."	Someone perceives that nobody is helpful to her. She felt bothered by her family staying at her house: "I already have my own stress, and then I'm taking on their stress"	Participant got HIV as a child from a blood transfusion after an accident. He blames his mother for being HIV-positive because she did not let him die after the accident. To end living with HIV, he tried to commit suicide.
2 No expression of CL	"The loneliness was nearly unbearable" stated someone living in social isolation, spending his days with TV, daydreaming, and drinking, avoiding human interaction	"I have myself and God. I rely on me, my instincts, my intellect," explains an engaged teacher, who feels that he has "not really" someone who is helpful to him.	A heavy depressed smoker feels overwhelmed by his life, HIV, and taking care of his health: "I've become hopeless, more frustrated, I'm not healthy. I'm not like I used to be. I got fat."
3 CL attempted but not beneficial	"I want to tell my mom but then I don't want to hurt her heart" explains someone who keeps "important things, like the HIV, locked up."	A boyfriend's double-edged reaction to her diagnosis showing empathy and fear. First, he promised: "Baby I will be there for you. Don't worry. I love you." But in daily life she perceived his fear. "He would steam out the shower after me and make me use my own glass and plate. I felt very dirty and very isolated, like a porcelain fragile doll."	Someone "thinking positive" and "talking to God everyday" believes "He [God] has the power to heal." On the other hand he struggles with substance use and medication adherence.
4 CL beneficial but not empowering	"I'm keeping myself up and healthy, on account of her", explains a mother, who sees her main motivation to live in her daughter.	"I couldn't move! I woke up and I was just sick. So he and his sister's took care of me." described someone who suffered from a severe flu. Another participant receives financially support from her sister: "She just walks up to me, gives me checks," but there is no empowering relation.	A woman describes her positive self-affirmation: "I had to look in a mirror and say I love myself and other people still love me and they're not afraid of me."
5 CL beneficial and empowering	Participant who changed his life after being diagnosed. While previously substance abuse was his way to deal with problems, nowadays his most considered coping strategy is to "establishing meaningful friendships and relationships with people and I'm doing service. I'm giving back some of the support and love that was given to me during my time of need" "I'm always talking to people and helping them with connecting with meeting s and that sort of thing."	A participant feels motivated by his brother: "He's really concerned about me because I'm the youngest. He tries to encourage me to go to meetings, come to church, hang around positive people." Just after her diagnosis, someone met another HIV-positive woman for founding a support group. "She was like my mentor. She was empowering me."	"I try to lead the most positive life I can, eating right, not worrying so much, not letting a lot of things stress me out, and always staying happy," explains a woman's empowering optimism: "I'm trying to get a house built on some land and getting married."
6 CL is a central element in the person's life*	The founder of a HIV support group describes herself as a "workaholic," spending all her energy on the project. "This is my life and there are so many people who need me."		"I think that my house is very therapeutic for me" stated a woman who installed a Jacuzzi in her backyard. She centers her life on her wellbeing, starting work after 1 pm so that she can rest.

*Interviews did not provide information to rate centrality in CL receiving.

For any rating with discrepancies between two independent raters that was greater than one point on the 6-point Likert scale, another pair of raters performed again an independent coding and reviewed discrepancies consensually, if they occurred. In case there was not enough information for a reliable coding/rating, we excluded the case from further analysis. Not enough information applied to four codings of the criteria of CL (involving 2 *response of the heart* and 1 *openness/receptivity for spirituality* in CL self, and 1 *cognitive understanding* in CL giving) and to 20 ratings of the benefit of CL (involving 14 CL giving, 2 CL receiving, and 4 CL self). In total, we categorized 177 transcripts into 15 codes (presence of 5 criteria of CL for each of the 3 components) and three Likert scale ratings (benefit of each of the 3 components of CL for the recipient) providing one or more text passage quotes for each coding/rating.

2.3.1. Biological Measurements. As an immunological indicator of HIV disease progression, we measured CD4-cells/mm^3 with whole blood four color direct immunofluorescence, utilizing a coulter XL-MCL flow cytometer. For VL testing, we used the Roche Amplicor RT/PCR assay, sensitive to 400–750,000 copies/mL. Since an undetectable VL reduces HIV transmission risk by 96% [27], we used this parameter also as a dichotomous biological indicator of HIV transmission risk. Seven of 177 people were excluded from the growth curve modeling, since they did not provide a second blood sample at their follow-up time-point. Due to the cohort effect (loss of followup due to death, health deterioration, relocation of participants), 66/177 (37%) remained in the study after four years. This only allowed us to predict biological and clinical measures of health and health behavior over four years.

2.3.2. Health Behavior Measurements. In order to achieve and maintain an undetectable VL, greater than 95% adherence is required [28–31]. Originally, we measured self-reported treatment adherence of less than 95% over the past three days using the interviewer-administered adherence questionnaire of the AIDS Clinical Trials Group [32]. Data quality control revealed that the responses were subject to self-report bias, overestimating adherence. Of the 134 participants taking antiretroviral therapy at baseline, 63% had a detectable viral load but only 26% reported less 95% adherence over the past three days. Therefore, cumulative undetectable VL over four years was also used as a dichotomous biological indicator of taking and adhering to effective HIV treatment [18]. Safer sex behavior averaged over four years was based on the interview responses on the frequency of sexual activities, use of protection, number and HIV status of the partners. Based on this data, we calculated the percentage of those reporting having unprotected sex, consistent safer sex practices, and sexual abstinence over four years. Applying the Structured Clinical Interview [19], we controlled for substance use disorder onset/relapse over four years for all but six participants.

2.4. Statistical Analysis. Descriptive statistics were calculated for the coding of the five criteria, the ratings of CL (giving, receiving, and self), health behaviors, and health parameters. Likelihood ratio (LR) tests examined the association between each component of CL. Hierarchical regression analysis with stepwise deletion determined the importance of the five criteria in explaining the variance of each CL component and of the three components in explaining the variance of the sum of the CL components. Independent Student's t-test compared mean values of CL among those with sexual risk behavior and substance use disorder over four years. Hierarchical linear modeling [33], specifically growth curve analysis, tested our hypothesis that CL translates into CD4 cell preservation and cumulative VL over four years. The base model was composed of two levels: at level 1, equations were used to model the intraindividual changes in CD4 cells and VL over time, while at level 2, equations modeled interindividual differences in CL, age, gender, ethnicity, education, and baseline CD4 and VL status. CL was added last so that the significance of CL as a predictor was estimated after controlling for differences in sociocultural and baseline biological parameters. Bernoulli estimation models were used for the prediction of achieving/sustaining an undetectable VL. We examined post hoc if associations/trends between CL towards self and viroimmunological outcome remained/became significant after controlling for substance use disorder, VL slope, CL giving, and CL receiving.

3. Results

After an overview of the coding of the five criteria of CL and the rating of the effect of each component of CL, we present the results of our regression analysis and hierarchical linear modeling, testing our hypothesis for the direct and indirect links between CL and biological health outcomes.

3.1. Five Criteria of CL. Table 1 defines the five criteria of CL with illustrating examples for each component. As depicted in Figure 2, free choice is the most frequent criterion coded, followed by cognitive understanding, valuing/empowering, and *response of the heart*. Openness/receptivity *for spirituality* is the least present criterion. Over all components, the frequency order follows a pattern, with every criterion being most present in CL self, followed by CL receiving and CL giving, except for *response of the heart*, which is most common in CL receiving and least in CL self.

3.2. Rating of the Components of CL. Table 2 explains the rating of the benefit of CL for the recipient with characteristic anchor examples for CL (giving, receiving, and self), and Figure 3 shows the percent frequencies of the rating on a 6-point Likert scale. On average, CL was rated high ($M = 4.13 \pm 1.10$ for CL towards self, $M = 3.98 \pm 0.95$ for CL receiving, and $M = 3.97 \pm 1.22$ for CL giving). Overall, beneficial CL (range 4–6) was rated by 73% for CL self, 69% for CL giving, and 78% for CL receiving.

Grouping CL at the 25th versus 75th percentile compares participants with low scores (nonbeneficial, no or even self-damaging CL, score = 1–3) versus those with high scores (self-empowering CL or even CL as a core element in the person's life, score = 5-6). High CL towards self had the

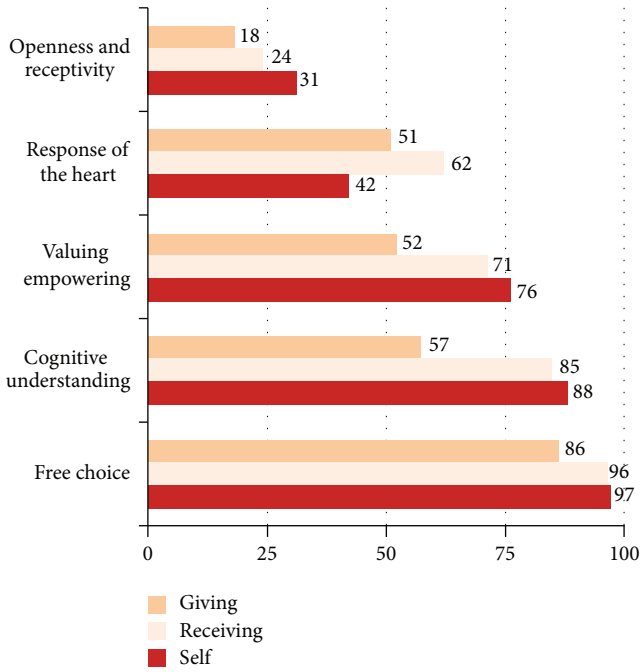

Figure 2: Presence of the five criteria (free choice, cognitive understanding, valuing/empowering, response of the heart, and openness and receptivity for spirituality) for all three components of compassionate love: giving, receiving, and self (% frequencies of the 15 codings detailed in Table 1).

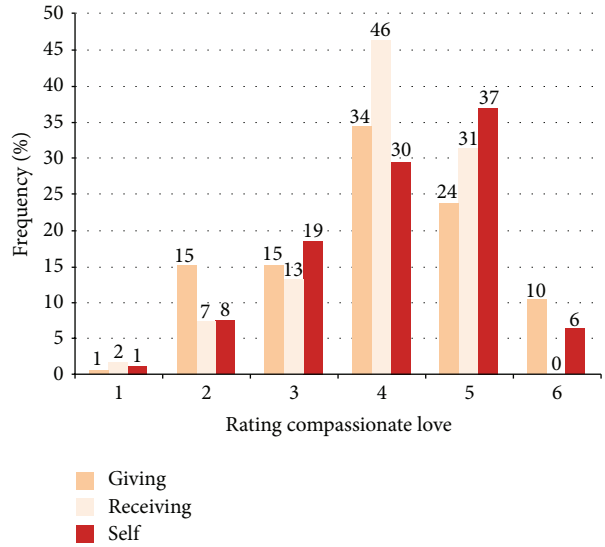

Figure 3: Compassionate love giving, receiving, and self (% frequencies of the 3 ratings detailed in Table 2). The rating is on a 6-point Likert scale with 1 = CL negative or harmful, 2 = no expression of CL, 3 = CL attempted but not beneficial, 4 = CL beneficial but not empowering, 5 = CL beneficial and empowering, and 6 = CL is a central element in the person's life.

strongest association with high CL receiving (LR 54.06, $P < .001$). Almost all participants with high CL towards self (93%) also received high CL from others, compared to only 38% of those with low CL towards self. Moreover, high CL towards self was also related to giving high CL towards others (LR 11.02, $P = .001$). Conversely, most participants with low CL for themselves (62%) received low CL from others. Most (77%) participants with high CL self also gave high CL to others, compared to 49% of those scoring low on CL towards self. Similarly, in most (88%) participants, giving high CL to others was reciprocated by receiving high CL from others, compared to 57% receiving beneficial CL from others among those low on CL giving (LR 18.84, $P < .001$). In summary, CL towards self and others was reciprocal, with those low on CL towards self being least likely to receive CL from others.

3.3. Hierarchical Linear Regression Analysis. To determine how much variance in CL (giving, receiving, and self) was explained by the five criteria, we employed a hierarchical linear regression analysis with stepwise exclusion. According to the adjusted R^2, the five criteria explained 53% of variance in CL giving (33% valuing/empowering, 10% cognitive understanding, and 10% other three criteria), 40% of variance in CL receiving (19% valuing/empowering, 11% free choice, and 10% other three criteria), and 48% of variance in CL self (29% valuing/empowering, 10% cognitive understanding, and 9% other three criteria).

Intercorrelations between the components of CL were significant (self/giving $r = .60$, self/receiving $r = .45$, giving/receiving $r = .40$; P's $<.001$). Hierarchical linear regression calculated how much variance of the full expression of CL (indicated by the sum of CL giving, receiving, and self) was explained by each component. According to the adjusted R^2, CL self contributed 71%, CL giving 21%, and CL receiving 8% to the explanation of variance in full expression of CL. The correlation between CL self and the sum of CL (CL self, CL giving, and CL receiving) was $r = .84$, $P < .001$, which demonstrates that CL self is almost congruent with the full expression of CL.

3.4. Longitudinal Relation between CL and Safer Sex and Less Substance Use Disorder. Over four years, 19% of the participants reported having unprotected sex, 62% stated consistent safer sex practices, and 19% reported sexual abstinence. Substance use disorder onset/relapse occurred in 29% of participants. In line with our directed hypothesis (one-tailed significance testing), independent t-tests showed lower mean scores on CL for those with substance use disorder (CL giving $M = 3.65 \pm 1.11$ versus 4.01 ± 1.23, $P = .017$; CL receiving $M = 3.76 \pm 0.92$ versus 4.05 ± 0.94, $P = .029$; CL self $M = 3.79 \pm 1.07$ versus 4.25 ± 1.10, $P = .008$) but not among those with unsafe sex practices. Ratings of CL and frequency of sexual interactions, use of protection, number and HIV status of the partners were not significantly correlated.

3.5. Hierarchical Linear Modeling of the Link between CL and Biological Health Outcome. At baseline, only 29% of the participants had an undetectable VL indicating a poor uptake and adherence to HIV treatment at study entry. CL towards self was significantly higher among those who entered the study with an undetectable VL (CL self $M = 4.35 \pm 0.93$

versus 4.03 ± 1.15, P (one-tailed) = .040), whereas baseline VL was not associated with other-centered CL. Baseline CD4 cells (M = 296.71 ± 102.45) were not significantly correlated with self- and other-centered CL.

Hierarchical linear modeling allowed us reliable prediction of CD4 and VL slopes over four years, although the study measured CD4 and VL over ten years. Table 3 provides an overview of CL as a predictor of CD4 cell preservation and cumulative VL over four years. Only CL towards self predicted cumulative undetectable VL, irrespective of sociocultural factors and baseline biological parameters (1-tailed P = .003). Since CL towards self was significantly associated with less substance use disorder (see above) we also confirmed that the association between CL towards self and cumulative undetectable VL was not mediated by substance use disorder.

Since all three components of CL were highly intercorrelated, we tested if the association between CL towards self and cumulative undetectable VL was independent of differences in CL giving and receiving. As postulated in our structural framework, controlling for CL giving, which in itself showed a tendency towards achieving cumulative undetectable VL (1-tailed P = .147), increased the strength of the link between CL self and cumulative VL (1-tailed P = .002). Hence, if all participants were equally engaged in giving CL to others, CL self would be a stronger predictor of treatment success and HIV transmission risk. In line with our hypothesis, after controlling for CL receiving, CL self was no longer significantly associated with cumulative undetectable VL (1-tailed P = .468). In other terms, if those low on CL self would not be less likely to receive CL from others, lower CL self would no longer predict HIV risk behavior (decrease in undetectable VL over time).

There was a trend between CL towards self and CD4 cell preservation (1-tailed P = .112), which was not altered after control for substance use disorder but disappeared after control for cumulative undetectable VL (1-tailed P = .468). Since cumulative VL predicted CD4 slope over 4 years (coefficient 1.767, t-ratio 2.557, df 959, 1-tailed P = .006), the trend between CL towards self and CD4 preservation was explained by differences in treatment success. Moreover, the trend between CL towards self and CD4 cell preservation became significant only after controlling for CL giving (1-tailed P = .048) and stronger after controlling for CL receiving (1-tailed P = .057). In other terms, CL towards self predicts CD4 cell preservation after controlling for CL giving. As noted above, PLWH giving high CL towards self were more likely to give high CL towards others. If participants would be equal in giving CL to others, CL towards self would predict a better immunological outcome.

Overall, achieving undetectable VL tended to decline over time (undetectable VL slope coefficient = −0.048, t-ratio = −1.780, df 161, 2-tailed P = .077), irrespective of sociocultural background and initial CD4 and VL status. To examine the protective effect of high versus low CL self, we calculated the ratio of the slope of change in undetectable VL for those scoring low on CL towards self (at the 25th percentile, score = 3, n = 45) compared to those scoring high (at the 75th percentile, score = 5, n = 73). Over time, undetectable VL was 1.49 times more likely among those high versus low on CL towards self (even after controlling for baseline differences in undetectable VL); in addition, they were already at baseline 2.25 times more likely to achieve undetectable VL (36% versus 16%, 2-tailed P = .002). The protective effect of high CL self was potentially underestimated, since we had a significant time effect (e.g., 15% had died as of 4/30/2004 and 32% as of 4/30/2010). A Chi-square test showed that more participants dropped out of the study among those low on CL self (32% versus 38%, P = .05).

Thus, our hypothesis of a positive link between CL and biological outcomes of health behaviors and health was supported for CL towards self. Nevertheless, differences in giving and receiving CL alter the strength of the association between CL towards self and positive viroimmunological outcome. Notably, only 38% of those low on CL self received high CL from others, compared to 93% of those with high CL self (P < .001). CL towards self no longer predicted undetectable VL after controlling for differences in CL receiving. In other terms, if those low on CL self would have equally received CL from others, a higher risk of treatment failure and HIV transmission could have been prevented. In addition, giving high CL to others was more prevalent among those high versus low on CL self (77% versus 49%, P = .001). After control for CL giving, CL towards self predicted CD4 cell preservation. Thus, provided if participants would be equal in giving CL to others, CL towards self would predict a better immunological outcome as well.

4. Discussion

In this study in PLWH, we added the third component of CL towards self to Underwood's working definition of giving and receiving other-centered CL (p. 75-76) [3]. Based on a report of Doug Oman to the Fetzer Institute [1], this is the first study that is fully operationalizing all five criteria defined by Underwood (*free choice*, *cognitive understanding*, *valuing/empowering*, *openness/receptivity for spirituality*, and *response of the heart*). We analyzed how essential each criterion is for CL to be beneficial for its recipients. In addition, we examined how the benefit of self- and other-centered CL are intertwined and which component of CL predicts longitudinally into biological outcomes (CD4 cells, VL), indicating slower HIV disease progression, taking and adhering to antiretroviral therapy, and lower transmission risk. Finally, we will discuss the potential role of health care professionals in fostering CL based on these findings.

4.1. Essential Criteria for the Benefit of CL. According to our coding, almost all participants expressed and received CL out of *free choice*, mostly with *cognitive understanding* and *valuing/empowering*, which was beneficial in about two-thirds of the cases. The essential criterion for the perceived benefit of CL is valuing and empowering the other and oneself at a fundamental level. Additionally, *cognitive understanding* of the needs and feelings of the other and oneself is related to the perceived benefit of CL. Both criteria may be encouraged

Table 3: Compassionate love (CL giving, receiving, and self) as predictor of cumulative undetectable viral load (VL) and CD4 cell preservation over 4 years.

Predictor	Prediction to[a]	Controlling for	Coefficient	T ratio	n[b]	P[c]
CL giving	Cumulative undetectable VL		0.011	1.055	156	.147
	CD4 cell preservation		−0.191	−0.552	156	.291
CL receiving	Cumulative undetectable VL		<0.001	0.023	168	.491
	CD4 cell preservation		−0.777	−0.824	168	.206
CL self	Cumulative undetectable VL		0.010	2.841	166	.003
		Substance use disorder	0.008	2.390	159	.009
		CL giving	0.012	3.068	152	.002
		CL receiving	0.002	0.470	164	.319
	CD4 cell preservation		0.495	1.220	166	.112
		Substance use disorder	0.424	1.049	159	.148
		Cumulative undetectable VL	0.017	0.080	166	.468
		CL giving	0.766	1.671	152	.048
		CL receiving	0.754	1.586	164	.057

[a]All models are controlled for differences in age, gender, ethnicity, education, CD4 cells, and undetectable VL at entry.
[b]Participants with missing data on CL, substance use disorder, VL and CD4 cells were excluded, DF = $n - 9$.
[c]One-tailed test.

by health care professionals. When PLWH receive CL, it is more likely to be rated as effective if it is given out of *free choice*. Ironically, in the health care setting the professional duty may be a barrier to the effectiveness of CL since *free choice* was the second most important criterion for the rating of a positive effect of CL. Based on the interviews/essays, the *response of the heart* and the *openness and receptivity for spirituality* are less frequent and less essential criteria for a positive impact of CL. For clinical practice, this means that valuing and empowering PLWH is perceived as an important component of care in the health-care setting.

4.2. The Relation between Self- and Other-Centered CL—Clinical Implications and Applications. Interestingly, the ratings of CL towards self are highly intercorrelated with those of receiving CL from others and giving CL to others. Based on the ratings, almost all participants who took care of themselves benefited from CL from others as well. Although the direction of this association remains to be established, receiving CL from others potentially promotes better self-care. Unfortunately, those who rated low on CL towards self—and thus more in need of CL from others—were those who mostly lacked supportive CL from others. This dovetails with our prior research on spiritual transformation [34]. Potentially, people who neglect and isolate themselves are the ones who are mostly in need of receiving intrinsically motivated CL from health care professionals and are at the same time least likely to receive attention. Furthermore, those who are not receptive for CL towards self may be also less receptive for CL from others, even if provided. A study of Oman et al. [35] showed that health care professionals may enhance their self-efficacy to provide CL to patients by practicing passage meditation. Perhaps such spiritual interventions are useful to train health care professionals to meet their patients' need for CL.

According to our rating, putting the well-being of the other in the center was reciprocated by others and coincided with better self-care. Based on those ratings, health care professionals may promote volunteering or care taking of others in PLWH to enhance both self-care and social support. Furthermore, Carson et al. [36] found that an intervention based on loving-kindness meditation focusing on both feelings of self- and other-centered love related to reduced pain, anger, and psychological distress in people with back pain. This supports the notion that health care professionals may enhance CL using spiritual interventions.

4.3. CL towards Self as the Basis of Other-Centered CL. The most relevant finding of our study is that ratings of self-centered CL were almost congruent with the total amount of CL expressed (giving, receiving, and self). Based on our ratings, promoting CL towards self, experience of self-value and self-empowerment, and the cognitive understanding of one's needs are important steps to enhance the reciprocal exchange and growth of CL. Our findings support the theories of Underwood that receiving and giving other-centered CL fuels self-centered CL and vice versa (p. 75-76) [3]. The central role of CL towards self, which was identified clearly in our inductive qualitative analysis, should be added to the Underwood's working model of CL. In summary, our results suggest that CL for oneself is potentially the seed of expressing CL towards others and being receptive for CL from others.

4.4. CL towards Self Translates into Healthier Behavior and Health. In line with our above results, CL towards self was the only component of CL ratings that ultimately predicted healthier behavior, lower HIV transmission risk, and a trend towards better biological health. Prior studies indicate that achieving an undetectable VL requires both receiving excellent health care (including a good patient-physician relationship), taking, and adhering HIV treatment [37]. Maintaining an undetectable VL could limit sexual transmission of HIV [27] as well as mother to child transmission [28]. Although

CL was not associated with sexual risk behavior, people rated as expressing more compassionate love towards self have a lower risk of transmitting HIV to others. This is because they are more likely to achieve and sustain an undetectable VL over time, which reduces HIV transmission risk by 96% [27]. In addition, self- and other-centered CL ratings were associated with a lower risk of substance use disorder onset/relapse, mainly for those with alcohol and cocaine abuse. Alcohol and cocaine use are known to be associated with faster CD4 decline and poorer VL control [29, 38]. Therefore, people with substance use disorders are an important at-risk group among PLWH.

HIV disease progression and immunodeficiency (indicated by CD4 decline) are largely prevented by early initiation of treatment [30] and sustaining an undetectable VL [31]. Our findings suggest that HIV treatment could be a powerful mechanism linking immune preservation and perceived CL self, because the trend towards CD4 preservation was explained by successful HIV treatment. If CL towards self and others predicts a better immunological outcome, this could be indirectly through treatment adherence rather than a direct psychoimmunological process. However, our own research suggests a direct psychoimmunological pathway for spirituality. In the same sample that we used to examine CL, we found that an increase in spirituality after diagnosis [16], a positive view of God [12], and spiritual coping [18, 37] predicted slower CD4 decline and better VL control above and beyond the effect of positive health behaviors. In fact, we found that spirituality was a stronger predictor of health than absence of depression, which was the most powerful psychological predictor [12, 15, 16]. Potentially, *openness and receptivity for spirituality* is an essential criterion for CL to benefit health, although it was one of the least prominent criteria for the perceived benefit of CL in our qualitative analysis. Those results propose that *openness and receptiveness for spirituality* as a criterion for the health benefit of CL warrants further study. This dovetails with concept based on Buddhist thinking of self-compassion of Neff [39], consisting of three main components: self-kindness versus self-judgment, sense common humanity versus isolation versus, and mindfulness versus overidentification. This spirituality based concept of self-compassion predicted physical and psychological well-being in college students [40].

Our study suggests that perceived CL towards self predicts better treatment success and lower HIV transmission risk. There is also a trend towards slower HIV disease progression among those rating high on CL self, which is explained by better treatment success. Most importantly, CL towards self no longer predicts undetectable VL over time after controlling for differences in ratings of CL receiving. This may indicate that for those lacking CL self, receiving CL from others potentially protects against cumulative risk of treatment failure and HIV transmission.

4.5. Limitations. The main limitation of this study is that the interviews were not initially designed to measure CL, although with very few exceptions, we had enough information for our codings and ratings. In addition, there was a cohort effect where PLWH who died or did not feel well enough to visit our study site may have produced a bias towards positive health behavior and health. A positive self-report bias was also likely for health behaviors. In addition, this study excluded people with active substance use disorder at entry. Furthermore, the results regarding the health behaviors of PLWH in South Florida cannot be generalized to other populations or cultural contexts. Nevertheless, the advantage of studying the relationship between CL and health in PLWH is that there are biological surrogate markers of health behavior and immune function allowing us to generate knowledge on the link between CL and health that may potentially be important for other diseases as well.

5. Conclusions

In summary, *valuing/empowering* and *cognitive understanding* appear to be essential criteria for CL to be perceived as beneficial. Receiving CL is more beneficial for people if it is perceived as given out of free of choice. Perceived CL towards self is highly intercorrelated with giving and receiving other-centered CL. According to our rating, those who do not provide CL to themselves are also least likely to receive CL from others, including health care professionals. Future studies should examine whether health care professionals may prevent the cumulative risk of treatment failure and HIV transmission by walking the extra mile for those patients that lack self-centered CL. According to our ratings, CL towards self forms the basis of giving CL to others and being open to receive CL from others. Most importantly, self-reports of giving CL towards self and others ultimately predict positive biological outcomes over 4 years, such as achieving a cumulative undetectable VL that reduces both HIV disease progression and transmission. The analysis of the association between CL and longevity is forthcoming.

Abbreviations

CD4:	Cell surface receptor that HIV uses for cell entry; CD4 cell decline is a surrogate marker HIV disease progression and immunodeficiency
CL:	Compassionate love
HIV:	Human immunodeficiency virus
PLWH:	People living with HIV
LR:	Likelihood ratio
VL:	Viral load of HIV, undetectable under taking and adhering to effective HIV treatment
WHO:	World Health Organization.

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Research Article

German Psychiatrists' Observation and Interpretation of Religiosity/Spirituality

Eunmi Lee[1] and Klaus Baumann[1,2]

[1] *Departement of Caritas Science and Christian Social Welfare, Faculty of Theology, University of Freiburg, Platz der Universitaet 3, 79098 Freiburg, Germany*
[2] *Freiburg Institute for Advanced Studies (FRIAS), Universität Freiburg, 79098 Freiburg, Germany*

Correspondence should be addressed to Klaus Baumann; klaus.baumann@theol.uni-freiburg.de

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The purpose of this study was to explore how contemporary German psychiatrists think about religiosity/spirituality (ReS) in regard to their therapies. We conducted an anonymous survey among the clinical staff of psychiatry and psychotherapy departments in German university hospitals and faith-based clinics in the same cities. Two main instruments were used, the Duke University Religion Index (DUREL) and the questionnaire from Curlin et al. "Religion and Spirituality in Medicine: Physicians' Perspectives." A total of 123 psychiatrists participated in this survey. However, due to incomplete responses, only 99 questionnaires from psychiatrists were analyzed. Results show that German psychiatrists positively experience the influence of ReS on patients' mental health. Psychiatrists' own ReS significantly influenced their interpretation of the effect of ReS on psychiatric patients as well as their attitude toward ReS in the clinical setting. The more religious psychiatrists are, the more they tend to observe a positive influence of ReS on mental health. In light of these results, psychiatrists should be aware of their own religious/spiritual characteristics and also reconsider their assumptions about professional neutrality and value openness. Furthermore, training programs on religious/spiritual issues and effective teamwork with chaplains are recommended.

1. Introduction

While it is common for believers who are ill to pray for healing or strength to endure the challenges of their illness, religious practices have often been viewed skeptically by psychiatric staff. In fact, several symptoms of psychological disorders can be connected with atypical or exaggerated religious/spiritual phenomena. Nevertheless, studies have shown that religion and/or spirituality are important for psychiatric patients. For example, Cunningham et al. found that Irish people with depression or bipolar disorder associate their religious/spiritual beliefs with solace and hope; especially when patients felt that they could not control their psychiatric problems, their beliefs safeguarded them against feelings of helplessness [1]. According to the reports of psychiatric patients, religiosity/spirituality (ReS) is an important part of their lives and particularly helpful in times of sickness [1–3].

In recent decades, the number of studies on the relationship between ReS and mental health has grown steadily. Research has used different traits, for example, religious affiliation, churchgoing, or personal importance, to examine the role of ReS among different populations and has shown inconsistent results. Various studies, though, have demonstrated that ReS has a positive effect on a number of psychiatric problems, including depression [4–6], suicide [7, 8], substance abuse disorder [9, 10], anxiety disorder [11], and posttraumatic stress disorder [12, 13]. One study conducted by Kim and Seidlitz with Korean university students showed that spirituality moderated the effect of stress on negative affect, and this buffer function was stronger for students with a religious affiliation [14]. Another study by Miller et al. revealed that those who consider religion and/or spirituality an essential aspect of their lives have one-fourth the risk of having a major depression than those who do not find ReS important [4]. Furthermore, those with major depressive parents who highly rated religion and/or spirituality showed one-tenth the risk of experiencing major depression than the comparison group.

Still, there are also empirical studies that have not confirmed a positive influence of ReS on psychiatric patients [15, 16]; some have even shown negative effects of ReS [17, 18]. For instance, Büssing and Mundle surveyed German patients with depressive and/or addictive disorders. According to their results, intrinsic religiosity as measured by *Reliance on God's Help* (RGH) and depression as measured by *Beck's Depression Inventory* (BDI) were not significantly associated [15].

Along with the growing body of research, there is an increase in international interest and discussions about the integration of ReS into therapeutic settings [19–21]. In addition, psychiatric patients desire that their religious/spiritual needs can be handled by their medical staff [22, 23]. Yet, psychiatrists appear less open to religious/spiritual issues in the "standard" clinical routine. For example, British psychiatrists in a study by Durà-Vilà et al. generally had a positive attitude toward ReS in psychiatry and psychotherapy, but none of them considered it part of their routine clinical practice [24]. Hence, therapeutic processes in psychiatry and psychotherapy typically do not specifically address religious/spiritual issues in the clinical setting. When such topics are discussed, patients are generally the ones who actively bring up these subjects, not their psychiatrists or psychotherapists [2].

There are plausible reasons why psychiatrists are reluctant to deal with religious/spiritual issues and/or related activities. The scientific critique of religions as such, which was greatly influenced by Sigmund Freud, may be the most prominent reason. Freud observed the similarities between obsessive-compulsive neurosis and religious rituals and/or behavior of religious persons [25, 26]. Although few contemporary psychiatrists would follow him rigidly, Freud's theory and his influence can hardly be disregarded. Another aspect is the fact that psychiatrists usually encounter phenomena of ReS in a pathological context, such as delusions or hallucinations with religious contents. In this regard, German psychiatrist Wyss doubted whether there is any "Neurosis" or "Psychosis" without some kind of distorted religious content [27, 28]. This can be seen not only in clinical practice but also in training materials, particularly in Germany [26, 29, 30]. For instance, contemporary psychiatry and psychotherapy textbooks hardly mention religious/spiritual topics; when they are mentioned, it is only in negative contexts [26, 29, 30].

In our pilot study, psychiatrists pragmatically mentioned lack of time as one of the most frequent barriers to addressing religious/spiritual issues in therapeutic processes [31]. In addition, psychiatric staff also cited their obligation to maintain professional neutrality, in the sense that patients must not be influenced by psychiatrists' own ideologies, mental attitudes, or other positions [31].

International interest and discussions about an adequate integration of ReS in therapeutic settings are growing, though not as strongly in German-speaking areas as in other countries, such as USA. Following the preliminary results of our pilot study, this survey aimed to answer the following questions: how do German psychiatrists and medical psychotherapists perceive and interpret the effect of ReS on their patients in hospital settings? What makes them reluctant to commonly integrate ReS into their therapies?

2. Materials and Method

2.1. Respondents. An anonymous survey was conducted from October 2010 to February 2011 to explore the viewpoints of psychiatric staff in regard to ReS. Psychiatric staff in this study was medical, (psycho-) therapeutic, and nursing staff working directly with patients. The survey involved clinical staff from psychiatry and psychotherapy departments in German university hospitals and faith-based clinics in the same cities. Overall, 12 of 32 university hospitals and 9 of 21 faith-based clinics participated in this survey.

The medical director of each psychiatry/psychotherapy department distributed a paper-based questionnaire to psychiatric staff. Of 1,654 distributed questionnaires, 404 were returned (response rate = 24.43%). A total of 123 questionnaires (32%) had been filled out by psychiatrists. For the purpose of our analysis, we focused only on the psychiatrists. An isolated response rate among the psychiatrists could not be calculated, as only the total number of psychiatric staff in each hospital could be obtained at the beginning of the survey. Due to incomplete responses, only 99 questionnaires from psychiatrists were analyzed.

2.2. Measures. We operationalized ReS by implementing two measures, the Duke University Religion Index (DUREL) and a questionnaire on "Religion and Spirituality in Medicine: Physicians' Perspectives" developed by Curlin et al. [32]. Each instrument was used to measure psychiatrists' religious/spiritual characteristics, their observation/interpretation of the influence of ReS on patients' mental health, and also their attitudes/self-reported behavior toward ReS in therapeutic settings.

Using these two instruments, a pilot study was conducted in the department of psychiatry and psychotherapy of the Freiburg University Hospital in Germany from December 2008 to January 2009 [31]. Prior to the pilot study, these instruments were translated into German (for the first time) and revised by a team of professionals.

2.2.1. DUREL. DUREL, developed by Koenig et al., is a widely accepted and well-known instrument for measuring basic religious/spiritual traits. Using DUREL, we measured organizational religiosity by asking the question "How often do you attend church or religious meetings?", measured according to a 6-point scale with response options ranging from *more than once a week* to *never*. Nonorganizational religiosity was measured by asking the question "How often do you spend time in private religious activities, such as prayer, meditation, or Bible study?", using a 6-point scale with response options ranging from *more than once a day* to *rarely or never*. DUREL also incorporated three questions to measure intrinsic religiosity, which we combined into one item for our analyses: "My religious beliefs are what really lie behind my whole approach to life," "I try hard to carry my religion over into all other dealings in life," and "In my life, I experience the presence of the Divine (i.e., God)." These three questions were measured according to a 5-point scale, with response options ranging from *definitely*

not true to *definitely true of me*. The three items related to intrinsic religiosity were originally obtained from Hoge's 10-item Intrinsic Religiosity Scale and strongly correlated with Hoge's original items ($r = .85$); reliability ($\alpha = .75$) was demonstrated for these three items as well [33, 34]. In our study, the three items of intrinsic religiosity also showed a strong reliability (internal consistency) of $\alpha = .911$.

2.2.2. Curlin et al. Questionnaire. Curlin and colleagues developed a questionnaire to measure physicians' observations and interpretations of the influence of ReS on patients' health as well as their attitudes and self-reported behaviors regarding religious/spiritual issues in clinical settings. This questionnaire was developed by several qualitative pilot interviews and was tested via multiple iterations of expert panel review [32].

Based on comments from respondents in the pilot study, response options of each category were modified to a 5-point scale. The category regarding physicians' observations/interpretations was transformed into a 5-point scale (1: never, 5: always); likewise, the category regarding physicians' attitudes/self-reported behaviors was transformed into a 5-point scale (1: definitely not true, 5: definitely true of me). All items were redesigned into statements rather than questions. In addition, we decided to use the expression "religiosity/spirituality" rather than the original terminology "religion/spirituality." This was intended to encompass all related religious/spiritual issues; in German, the term "religion" can be limited to a religious affiliation. Fully described items are listed in Tables 3 and 4.

2.3. Statistical Analysis. Data was evaluated with SPSS 20.0 for Windows. To exam the difference between groups and variables, cross-tabulation as well as Pearson-square-test, univariate analyses of variance (UNIANOVA), and Spearman's rank correlation were used. Significance level was set at $P < .05$.

3. Results

3.1. Characteristics of Survey Respondents. Roughly two-thirds of responding psychiatrists worked in university hospitals. Among the respondents, 54.5% were men and 45.5% women. On average, participants were 39.03 (SD = 8.34 (all numeric results were rounded off to the nearest hundredth.)) years old (Table 1).

While about 57% considered themselves a believing person, 70.7% reported a religious affiliation. Nearly 41% of the responding psychiatrists indicated attending church or religious meetings once a year or less, and only 10.1% reported going to a religious service at least once a week. In regard to private religious activities like prayer, meditation, or scripture reading, more than half of the participants responded that they rarely or never spent their time on such activities; nevertheless, close to 30% reported doing so several times per week.

Slightly over half of the respondents agreed with the statement that their religious beliefs are central for their whole approach to life, and about 37% agreed that they try to carry their religion over into all other parts of their life. About 36% of the participants responded that they had experienced God or a higher being. The detailed results are described in Table 2.

Table 1: Characteristics of survey respondents.

Variable	Values (%)
Absolute number	99
Age (years)	39.03 ± 8.34
Clinic	
University hospitals	64 (64.6)
Faith-based clinics	35 (35.4)
Sex	
Female	45 (45.5)
Male	54 (54.5)
Denomination	
Have a religious affiliation	70 (70.7)
No religious affiliation[a]	29 (29.3)
Self-expression as a...	
Believing person	56 (56.6)
Nonbelieving person	43 (43.4)
Church attendance	
More than once a week	2 (2.0)
Once a week	8 (8.1)
A few times a month	14 (14.1)
A few times a year	35 (35.4)
Once a year or less	25 (25.3)
Never	15 (15.2)
Private religious activities	
More than once a day	3 (3.0)
Daily	13 (13.1)
Two or more times per week	13 (13.1)
Once a week	6 (6.1)
A few times a month	12 (12.1)
Rarely or never	52 (52.5)

[a]Atheist, agnostic, and none.

Moreover, the score of intrinsic religiosity was calculated as the sum of the three items, whereupon $m = 6.71$ (SD = 3.07, $N = 79$) on a scale of 12.0 (To ensure that the nature of the ordinal scale was not affected in the German version, the translated answer "unsure" was removed in the analysis of the sum of intrinsic religiosity, as the German word can mean either "I am not sure" or "I have no idea." The highest possible score was therefore 12.0 rather than 15.0, and an intrinsic religiosity score could be calculated for 79 cases. Furthermore, we tested to see if there were any significant differences related to the response option "unsure" according to demographic characteristics (clinic, sex, age and religious affiliation). However, no significant differences were found.) (3.0 lowest value to 12.0 highest value). This was marginally lower than the median. Concerning subgroups (clinic, sex, and age), the differences in intrinsic religiosity scores were compared using UNIANOVA. It is noteworthy that no significant differences were found for any of the three of these supposedly distinctive variables.

Table 2: Psychiatrists' intrinsic religiosity.

	Definitely true of me	Tends to be true	Unsure	Tends not to be true	Definitely not true
Religious beliefs influence whole approach to life	19 (19.2)	34 (34.3)	3 (3.0)	18 (18.2)	25 (25.3)
Try to carry religion into other aspects of life	7 (7.1)	30 (30.3)	6 (6.1)	26 (26.3)	30 (30.3)
Experience God's presence	14 (14.1)	22 (22.2)	16 (16.2)	15 (15.2)	32 (32.3)

Table 3: Psychiatrists' observations and interpretations of the influence of ReS on patients' health.

Questionnaire Items[a]	Analysis	
	Mean[b]	Correlation with intrinsic religiosity[c,d]
Mention of religiosity/spirituality		
Patients mentioned ReS issues such as God, prayer, meditation, the Bible, and so forth.	2.96 ± 0.68	0.225*
Positive influence of religiosity/spirituality		
The influence of ReS on health is generally positive.	3.14 ± 0.73	0.418***
ReS helps patients to cope with and endure illness.	3.52 ± 0.61	0.388***
Patients have received emotional or practical support from their religious community.	3.20 ± 0.71	0.229*
ReS gives patients a positive, hopeful state of mind.	3.34 ± 0.63	0.374***
ReS helps patients to prevent "hard" medical outcomes like death via suicide.	3.11 ± 0.75	0.301**
Suffering from an illness often leads patients to ReS.[e]	2.84 ± 0.65	0.073
Negative influence of religiosity/spirituality		
ReS leads patients to refuse, delay, or stop medically indicated therapy.	2.25 ± 0.63	−0.301**
Patients used ReS as a reason to avoid taking responsibility for their own health.	2.13 ± 0.62	−0.337**

[a]Preceded by "considering your experience. . .."
[b]Response categories are 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always.
[c]Correlation between the sum of psychiatrists' own intrinsic religiosity scores and their response to the items.
[d]Spearman's correlation (1 tailed): $^{***}P < 0.001$, $^{**}P < 0.01$, $^{*}P < 0.05$.
[e]In the original questionnaire, this item asked whether "religiosity/spirituality causes guilt, anxiety, or other negative emotions that lead to increased patient suffering" and belonged to the category: negative influence. Based on comments from the respondents of the pilot study and other comments from a professional team, this question was replaced by the item "Suffering from an illness often leads patients to religiosity/spirituality."

3.2. Psychiatrists' Observations and Interpretations of the Influence of ReS on Patients' Mental Health. In the clinical setting, psychiatrists seem to be fairly frequently confronted with ReS and often even quite positively (data not shown). Approximately 57% of psychiatrists reported that their patients sometimes mentioned religious/spiritual issues, and 20% encountered such topics often. About 54% of the participants often observed that ReS helps patients to cope with their illness, and 42% observed this sometimes. Most of the respondents experienced that ReS supports a positive, hopeful state of mind in their patients (52.5% sometimes and 41.4% often). More than 70% did not observe that their patients refuse medically indicated therapy or avoid taking responsibility for their health status because of their religious/spiritual attitudes.

Is psychiatrists' own ReS associated with the way they observe and/or interpret the influence of ReS on patients? Significant correlations were found (Table 3); as the intrinsic religiosity scores of the psychiatrists increased, so did their perception of the positive effects of ReS. For example, the more religious psychiatrists are, the more they tend to observe a generally positive influence of ReS on mental health ($r = .418$, $P < .0001$) and the more they believe that ReS helps psychiatric patients to endure their illness ($r = .388$, $P < .0001$). The only item that did not significantly correlate with psychiatrists' intrinsic religiosity was to what degree they think that suffering from an illness often leads patients to ReS ($r = .073$, $P = .262$).

Again, in contrast to common sense expectations, there was no difference between faith-based clinics and university hospitals as to the physicians' observations and interpretations of the influence of ReS on patients' mental health.

3.3. Psychiatrists' Attitudes and Self-Reported Behavior regarding ReS in Clinical Settings. More than 75% of psychiatrists in our sample found it appropriate to ask about religion and/or spirituality, and more than 90% found the discussion of religious/spiritual issues appropriate when patients bring

Table 4: Psychiatrists' attitudes and self-reported behaviors regarding ReS in clinical settings.

Questionnaire items	Analysis	
	Mean[a]	Correlation with intrinsic religiosity[b,c]
Attitudes		
In general, it is appropriate for a psychiatrist to inquire about a patient's religion and/or spirituality.	3.18 ± 0.83	0.243*
In general, it is appropriate for a psychiatrist to discuss religious/spiritual issues, when a patient brings them up.	3.47 ± 0.63	0.135
In general, it is appropriate for a psychiatrist to talk about his or her own religious beliefs or experiences with a patient.	1.73 ± 0.75	0.281**
In general, it is appropriate for a psychiatrist to pray with a patient together.	1.30 ± 0.51	0.382***
Self-reported behaviors[d]		
I listen carefully and empathetically.	3.76 ± 0.46	0.242*
I try to change the subject in a tactful way.	1.82 ± 0.79	−0.273**
I encourage patients in their own religious/spiritual beliefs and practices.	3.18 ± 0.65	0.228*
I respectfully share my own religious ideas and experiences.	1.58 ± 0.73	0.332**
I pray with the patient.	1.12 ± 0.36	0.281**
I refer patients to chaplains.	2.96 ± 0.72	0.063
It is not my responsibility.	1.76 ± 0.86	−0.326**

[a]Response categories are 1 = definitely not true, 2 = tends not to be true, 3 = tends to be true, and 4 = definitely true of me.
[b]Correlation between the sum of psychiatrists' own intrinsic religiosity scores and their response to the items.
[c]Spearman's correlation (1 tailed): $^{***}P < 0.001$, $^{**}P < 0.01$, $^{*}P < 0.05$.
[d]Preceded by "when religious/spiritual issues come up in discussions with patients."

them up (data not shown). Listening carefully and empathetically to religious/spiritual topics was affirmed by 98% of the respondents; about 82% reported not turning away from such topics, and nearly 80% indicated that they encourage their patients to practice their religious/spiritual activities. When religious/spiritual topics enter the dialogue, 59.6% of psychiatrists responded that they prefer to refer their patients to chaplains, and 16.2% answered that they would definitely do so.

Generally speaking, psychiatrists seem reluctant to take part in religious/spiritual activities within their professional or clinical contexts. About 80% indicated that it is not appropriate to share their own ReS with patients, and only 12.1% of them reported actually doing so (11 of 99 shared their beliefs to some extent, and one respondent invariably did so). Praying with patients was perceived particularly critically. More than 90% regarded it as an improper act, and again only one respondent reported actually praying with patients.

Again, significant but weak correlations were shown between the psychiatrists' own ReS and their attitudes as well as self-reported behaviors toward ReS in therapeutic settings (Table 4) (To ensure that the nature of the ordinal scale was not affected in the German version, the translated answer "unsure" was removed in the analysis of the sum of intrinsic religiosity, as the German word can mean either "I am not sure" or "I have no idea". Furthermore, we tested to see if there were any significant differences related to the response option "unsure" according to demographic characteristics (clinic, sex, age and religious affiliation). However, no significant differences were found.). Psychiatrists with higher intrinsic religiosity scores found the integration of ReS more appropriate and also reported more positive behaviors toward ReS. For instance, the more religious psychiatrists are, the more they tend to consider prayer as a potentially appropriate intervention ($r = .382$, $P < .0001$) or actually pray together with patients ($r = .281$, $P = .006$). Yet, there was no correlation between psychiatrists' own ReS and their readiness to discuss religious/spiritual issues with patients ($r = .135$, $P = .123$) or to refer patients to chaplains ($r = .063$, $P = .301$). Psychiatrists in faith-based clinics reported more often than those in university hospitals that they refer their patients to chaplains, when ReS issues come up in discussion with patients ($m = 3.19$ versus $m = 2.83$, $P = .022$). This is the only significant difference between the tested variables of psychiatrists of the two types of clinics.

We also asked psychiatrists what kind of obstacles might make it difficult to integrate ReS into their therapeutic work (Figure 1). It was possible to give multiple answers. The most frequently mentioned barriers were professional neutrality (54.5%) and lack of time (34.3%), followed by the opinion that it is not psychiatrists' responsibility (22.2%).

To conclude, psychiatrists were asked whether they regard ReS as a coping strategy and whether ReS could aggravate or even cause psychiatric disorders. Most of the respondents

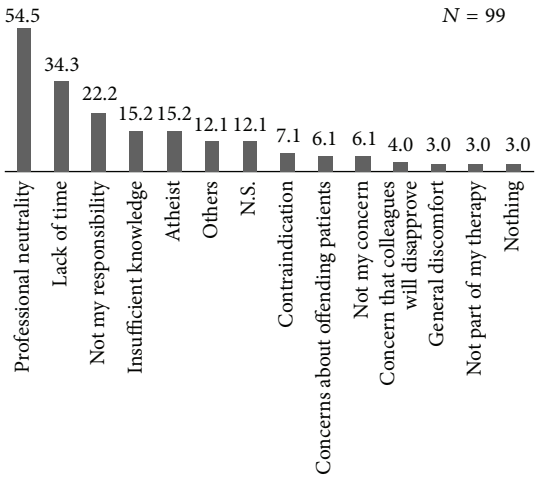

Figure 1: Barriers to the integration of ReS.

considered ReS a coping strategy (54.5% sometimes and 34.3% often, data not shown). About 70% answered that ReS can aggravate mental health problems (62.6% sometimes and 9.1% often) but do not usually think that it causes psychiatric disorders (23.2% never and 48.5% rarely). Again, the psychiatrists' intrinsic religiosity scores were significantly but not strongly correlated with considering ReS as a coping strategy ($r = .386$, $P < .0001$).

4. Discussion

The present study examined how contemporary German psychiatrists in psychiatry and psychotherapy departments in university hospitals and some faith-based clinics observe and interpret ReS in their clinical practice. According to the results, psychiatrists in hospitals generally observe that ReS has a positive influence on the health of their patients. ReS can be used as a coping strategy or also provide support, especially from religious/spiritual communities. The psychiatrists in our sample claim that they are quite open to ReS issues. When patients bring up religious/spiritual concerns, psychiatrists are ready to listen and discuss these issues with them and also cooperate with chaplains. Only one respondent said he felt uncomfortable to deal with ReS matters and therefore also difficult to integrate such topics into his therapies.

Nevertheless, it is too early to say that psychiatrists in Germany are ready to actively and consistently integrate ReS into their clinical practice. They prefer to let patients address ReS issues and are open to listening in such cases; they support patients carrying out religious/spiritual practices on their own but are hesitant to engage actively in religious/spiritual matters with their patients. This is quite similar to what research shows among American psychiatrists [32]. However, differences exist with regard to "active" behaviors like asking about religious/spiritual or other personal beliefs in the anamnesis and most evidently regarding prayer. About 70% of American psychiatrists find it appropriate to pray with patients when their patients are willing and/or they find it necessary [32]. Yet, 90% of German psychiatrists considered it inappropriate to pray with patients or share their own religious/spiritual backgrounds or beliefs.

Particularly interesting is the fact that there was a significant association between psychiatrists' own ReS and their attitudes and behaviors toward their patients' ReS. Significant but weak correlations (around $r = .3$) showed that the responding psychiatrists recognize and encourage positive sides of their patients' ReS when ReS is also important in their own lives. This tendency was also found with regard to their attitudes and self-reported behaviors. Psychiatrists are more eager to integrate religious/spiritual topics and/or activities into their clinical practice when ReS also plays a role in the lives of the psychiatrists themselves. This result has also been confirmed in other recent empirical research publications [31, 32, 35]. Noteworthily, there was no significant difference except referral to chaplains between psychiatrists working in university or faith-based hospitals.

The reported results provide empirical evidence that psychiatrists' manner of dealing with patients is not unaffected by their own ideologies, worldviews, or philosophies of life. In practice, psychiatrists aim to work with a professionally neutral attitude without following unconscious tendencies (especially biases), due to transference and countertransference dynamics. The attempt to maintain neutrality is mirrored in the results of our survey, in which 54.5% of the psychiatrists indicated that professional neutrality prevents them from addressing ReS topics. The results of our survey suggest that one's own religious/spiritual beliefs and attitudes should not be disregarded; professional "neutrality" requires psychiatrists to work through their own experience, attitudes, and values in order to consciously, reflectively integrate them into their clinical practice for the benefit of their patients. Like other personal attributes such as gender, race, or political views, religious/spiritual backgrounds do affect psychiatrists' therapeutic practices [36]. In conclusion, psychiatrists need to better understand their conscious and unconscious dynamics toward ReS and how their viewpoints influence their clinical practice. Training programs should include religious/spiritual issues in the context of psychiatry and psychotherapy, as well as increased interdisciplinary teamwork with chaplains or other psychiatrists who are familiar with religious/spiritual issues. This might enrich psychiatrists' day to day life and practice and also benefit the patients.

In spite of these meaningful results and discussions, this study has several limitations worth considering. First of all, the caution is warranted when generalizing these results, as this survey was conducted in psychiatry and psychotherapy departments of university hospitals and faith-based clinics, which may not be representative of all German psychiatrists. Besides, the sample size was rather small. Additionally, the original survey was aimed at all groups of psychiatric staff, but here only the data of psychiatrists was extracted for this focused analysis. Therefore, an exact response rate of psychiatrists alone from all the participating clinics could not be calculated. Moreover, minor content differences due to the translation of the original American version into German cannot be ignored. In this sense, different cultural and religious backgrounds between the USA and Germany

have been reflected in our translated version. Lastly, we measured psychiatrists' ReS using the DUREL. ReS is a broad and somewhat vague construct. There may be important aspects of ReS that the DUREL does not capture.

Future research should aim to include psychosomatic departments, private clinics, and resident psychiatrists with a large sample size for an even more representative picture. In addition, subsequent studies are needed to explore whether and how the integration of religious/spiritual elements into therapeutic processes affects therapeutic outcomes.

5. Conclusions

In conclusion, this survey shows the trend that contemporary German psychiatrists positively regard and interpret the influence of patients' ReS on mental health. In addition, this study indicates that psychiatrists' own religious/spiritual characteristics can affect therapeutic processes to a significant extent. Without being aware of it, psychiatrists' own ReS and attitudes toward ReS influence the extent to which they integrate the religious/spiritual needs of their patients into their therapies. In the light of these results, it is recommended that psychiatrists be aware of their own religious/spiritual experiences and attitudes. Furthermore, training programs dealing with ReS and effective interdisciplinary work with chaplains would be helpful to handle patients' ReS more suitably.

Conflict of Interests

The authors have no conflict of interests.

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Research Article

Attachment Theory and Spirituality: Two Threads Converging in Palliative Care?

Cécile Loetz,[1] Jakob Müller,[2] Eckhard Frick,[3] Yvonne Petersen,[4] Niels Christian Hvidt,[1,5,6] and Christine Mauer[1]

[1] *Ludwig Maximilians University of Munich, Clinic and Policlinic for Palliative Medicine, Germany*
[2] *Munich School of Philosophy, Germany*
[3] *Ludwig Maximilians University of Munich, Clinic and Policlinic for Palliative Medicine, Munich School of Philosophy, Germany*
[4] *Hospital of the "Barmherzige Brüder," Palliative Unit, Germany*
[5] *Research Unit of Health, Man and Society, Institute of Public Health, SDU, Denmark*
[6] *Freiburg Institute for Advanced Studies, Germany*

Correspondence should be addressed to Cécile Loetz; cecile.loetz@hfph.de and Jakob Müller; jakob.mueller@hfph.de

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The aim of this paper is to discuss and explore the interrelation between two concepts, attachment theory and the concept of spirituality, which are important to palliative care and to founding a multivariate understanding of the patient's needs and challenges. Both concepts have been treated by research in diverse and multiform ways, but little effort has yet been made to integrate them into one theoretical framework in reference to the palliative context. In this paper, we begin an attempt to close this scientific gap theoretically. Following the lines of thought in this paper, we assume that spirituality can be conceptualized as an adequate response of a person's attachment pattern to the peculiarity of the palliative situation. Spirituality can be seen both as a recourse to securely based relationships and as an attempt to explore the ultimate unknown, the mystery of one's own death. Thus, spirituality in the palliative context corresponds to the task of attachment behavior: to transcend symbiosis while continuing bonds and thus to explore the unknown environment independently and without fear. Spiritual activity is interpreted as a human attachment behavior option that receives special quality and importance in the terminal stage of life. Implications for clinical practice and research are discussed in the final section of the paper.

1. Introduction

The goal of palliative care is to improve the quality of life of terminally ill patients by preventing or relieving them from suffering. Relieving suffering does not only mean to insulate patients from physical pain. There are many more aspects which contribute to the patient's wellbeing such as social, psychological, and spiritual support [1]. This is why palliative medicine has to take a multidisciplinary approach to patient care. In the present paper, two important concepts come into focus, both founding a multivariate understanding of the patient's needs and challenges in the palliative situation: attachment theory and the concept of spirituality. Attachment Theory is a concept that is concerned with human relationship behavior in situations of loss, separation, or helplessness and can help to understand the patient's behavior, needs, and challenges [2, 3]. The patient's spirituality in health care and research is addressed by the field of Spiritual care. spiritual care is an interdisciplinary and cross-cultural discipline [4] in health care that scientifically addresses the spiritual and religious needs of patients and has become a part of medical care and education. Both concepts have been treated by palliative research in diverse the and multiform ways, as we will propound in the overview of research literature in the following section. But no effort has been made to integrate them into one theoretical framework in reference to the palliative context. The aim of this paper is to discuss the relevance of both concepts to palliative care, in order to develop a theoretical foundation for both aspects of the palliative situation concerned by Attachment Theory and

spiritual care: the dynamics of human relationships and the dimension of spirituality when approaching the end of life. First, we will give an overview of the research literature on Attachment Theory and Spiritual Care in Palliative Care. Following this, we will discuss the relevance of Attachment Theory to Palliative Care. Then, we will discuss the role of spirituality in the palliative context with respect to the role of human and spiritual relationships. Finally, we will bring into dialogue the concepts of attachment and spirituality in order to emphasize their correspondence and mutual enrichment. We will interpret spirituality as an option of human attachment behavior that receives special importance in the terminal stage of life. For this reason, we will point out consequences for theoretical and practical treatment of spirituality in Palliative Care.

2. Attachment Theory and Spiritual Care in the Palliative Context: An Overview of the Research Literature

2.1. Attachment Theory. While Attachment Theory is a very prominent concept in psychology, psychiatry, and psychotherapy [5–7], it has rarely been considered by research in Palliative Care, notwithstanding the fact that close relationships in Palliative Care are fundamentally important. Attachment patterns have an impact on illness behavior [8], on the physician-patient relationship [9], and thus on patient's communication and compliance. In the palliative situation, some attempts have been made to address family relationships and to facilitate communication [10, 11] or to identify determinants of depression and hopelessness in metastatic cancer patients [12] from an Attachment Theory perspective. Tan et al. [13] and Petersen and Koehler [2] made the effort to apply Attachment Theory to analyze interpersonal processes in Palliative Care and identified fundamental attachment patterns in patient's behavior. Milberg et al. [3] pointed out the importance of a "secure base" from a patient's and relatives' perspectives in palliative home care (a concept derived from Attachment Theory, as we shall see later). Due to the fact that the relevance of Attachment Theory to palliative research is an underrepresented issue, we will review some basic implications of the theory in this paper in order to integrate them with the concept of spirituality.

2.2. Spiritual Care. There has been growing interest in spiritual care since the 1990s [14], and thus the spiritual needs of palliative patients and their relatives have become a significant concern in clinical practice and research. Different surveys demonstrate the need for religious and/or spiritual support by a sizable proportion of the palliative patient population. For example, Balboni et al. [15] reported that 86% of the cancer patients judged Spiritual Care as being an important part of medical care. Studies have shown that, for many patients, their spirituality is an important resource in coping with chronic disease [16–19]. This is since a patient's spiritual relations can facilitate treatment-related decision making and improve their compliance with medical care [20, 21], as well as offer consolation and confidence and thus significantly enhance quality of life in the terminal stage [22–25]. These findings are not only applicable to countries and regions with a strong religious tradition, but also to secular societies [26–28]. Spirituality concerns the religious as well as the nonreligious dimensions of human personality and is not reducible to specific religious dogma (for the difference between religion and spirituality see Hvidt et al. [29]). In this respect, Spiritual Care provides the opportunity for a cross-cultural and interreligious approach to Palliative Care [30]. When suffering from spiritual distress, patients tend to show increased physical and psychological symptoms, leading to an increased need for medical care services [31]. Thus, providing Spiritual Care can significantly reduce medical care costs in palliative medicine [32]. But what is the content of Spiritual Care? What are the spiritual themes, needs, and distresses of patients and how should they be addressed in research and clinical practice? Several approaches have been made to conceptualize spirituality in palliative care and will be reviewed later in this paper.

2.3. Attachment Theory and Spirituality. In the concept of "Attachment to God," Kirkpatrick and Shaver have made an effort to integrate the concepts of Attachment Theory and Spirituality [33, 34], although with no special attention to Palliative Care. Several studies found a correlation between a stable relationship to God and a secure attachment pattern [35–37]. Following this line of thought for a spiritual/religious person, a transcendent figure like God can adopt the role of an attachment figure, providing a secure base for personal development and compensating for dysfunctions in social relationships [38]. Nevertheless, little is known about this concept in the context of Palliative Care. An application of the concept of "Attachment to God" to Palliative Care surely would be fertile. In the palliative situation, attachment to a transcendent figure may be an important resource for patients in coping with their extraordinary situation and an important factor in providing a dignified parting. However, as we will discuss later, the concept of Spirituality can be understood more broadly than meaning a personal relationship to God or a higher being.

3. Attachment Theory and Palliative Care

3.1. Why Attachment Theory Is Relevant to Palliative Care. Moving toward the end of life, palliative patients are confronted with a deep intrusion into their structure of relationships. Associated persons will change their behavior. Relatives, friends, or colleagues will pay them special attention, possibly visiting them to spend some time, say good-bye, or pretend that there is nothing wrong. Perhaps some of them in their embarrassment will avoid any contact at all; some will become emotional or be accompanied by a melancholic graveness. Of course, some of the patient's associated persons will do well at dealing with the situation and will provide important support, while others will be a burden making unreasonable demands or being unable to empathize with the patient's situation. Final affairs will be put in order, but old conflicts can erupt as well. In whatever way the patient's

personal environment adjusts to the situation, it happens with regard to the final separation that is imminent. For the patients, the palliative situation means an ineluctable abandonment of attachment to family and friends, a situation of loss. On top of which come the changes in the context of clinical care. When patients enter a palliative care ward, they are facing a medical environment different from that before. It is no longer about curing disease, but caring for the dying. Thus, the role of the doctor changes: he or she is no longer the lifesaver but a companion to someone who is dying, and this change may be accompanied by the patient's feelings of disappointment or abandonment.

With all these considerations in mind, it is crucial to take into account a concept that deals with human behavior in the situation of loss, separation, and helplessness, in order to understand the patient's behavior, needs, and challenges. This is why Attachment Theory is relevant to Palliative Care.

3.2. What Is Attachment Theory? Attachment Theory—initially developed by the British Psychoanalyst John Bowlby—describes the dynamics of relationships between individuals. According to this theory, attachment is defined as a fundamental, congenital need of human beings [39]. Developing a bond to a primary caregiver—mostly to the parents—in early infancy is crucial to laying the foundation for normal emotional, social, and cognitive development. Deprivation of such an Emotional bond to a consistent caregiver can result in so-called hospitalism, also known as adjustment disorder [40], which includes symptoms such as retarded physical and cognitive development and emotional and social disturbances, Based on the confidence children can acquire from parental care, they form a stable, internal representation or "working model" of interpersonal relationships with caregivers [13] which will later in life guide their perceptions, emotions, behavior, and expectations of others [41]. If the caregiver can appropriately respond to a child's signals, for example, crying, the child can in return learn to understand, organize, and regulate its own emotional state [42]. Consequently, if the child consistently experiences reliable, empathic, and responsive caregiving, it will develop a secure attachment pattern and thus a healthy coping strategy in stressful situations. But what happens if such a "secure base" can only partially be provided? Empirical research in infants, primarily led by the Canadian psychologist Mary Ainsworth, found three attachment patterns: secure attachment, avoidant attachment, and ambivalent attachment [43, 44], and a fourth, later discovered disorganized attachment pattern [45]. *In nuce*, all four patterns vary in a behavioral continuum of exploration, avoidance, intimacy, and clinging to a secure base [13]. For example, infants with a *secure attachment pattern* tend to have a healthy balance between intimacy and independence, being free to explore their environment and at the same time using their parent as a secure base when feeling stressed. Infants with an *avoidant attachment pattern* will be very independent in their exploration behavior and avoid their secure base even when feeling stressed. Infants with an *ambivalent attachment pattern* show almost no signs of independency such as exploration behavior when feeling stressed and behave clingy towards their secure base. Finally, infants with a *disorganized attachment pattern* do not fit into one of the mentioned categories and show rather various attachment behavior; they often show odd exploring behavior and seem to feel very ambivalent towards their secure base (see Table 1).

Table 1: Attachment patterns in children and adults.

	Secure	Insecure		
Children	Secure	Avoidant	Ambivalent	Disorganized
Adults	Autonomous	Dismissive	Enmeshed	Unresolved

The Strange Situation Protocol is a standardized research tool for assessing these attachment patterns in young children by observing their attachment behavior in two situations: firstly, in a situation of separation from their parent, and secondly, in a situation of reunion. Being highly dependent on parental care, infants usually fear separation from their caregivers. As children grow older, they learn to cope with this stressful situation in ways that depend on their attachment pattern.

Four corresponding patterns of infant attachment behavior have been found in adult relationships and are analogically categorized as, free (autonomous), dismissive (avoidant), enmeshed (preoccupied) and unsresolved (see Table 1, [46]). The operationalization of the adult attachment interview (AAI) allows the classification of a person into the four main categories of adult attachment patterns. The adult attachment projective picture system (AAP) is another commonly operationalized assessment tool for attachment patterns. Since it is less time consuming and complex, but nonetheless a reliable instrument, it is often used in clinical practice. The clinical implication of the AAP will be discussed later. Both instruments activate a person's early attachment experiences and help to concretize the specific attachment pattern that developed out of the relationship to the primary caregiver. AAI and AAP differentiate between four adult attachment patterns [47].

(1) Persons with an *autonomous attachment* representation usually have a coherent narration and are characterized by the capacity to reflect on positive and negative experiences with their caregivers. These individuals are able to show flexible integration and to value their experiences.

(2) Individuals with *dismissive attachment* representations are characterized by the deactivation of attachment-related aspects and by certain gaps in their narration that are usually caused by an inability to recall specific childhood memories. They often tend to idealize their parents without clarifying reasons for that idealization. Instead, they tend to make remarks (openly or hidden) that they have been rejected by their parents but claim not to have missed any parental support or felt any negative emotions towards that lack of interest.

(3) Individuals with an *enmeshed attachment* representation tend to be emphatic with respect to attachment experiences. They tend to talk a lot about their childhood difficulties, often coming back to that point during the interview, and usually showing that they have not yet come to terms with their childhood problems. Their parents often tended to spoil them, were very anxious, and/or caused guilt feelings when the child tried to be independent and explore its environment.

(4) Persons with an *unresolved attachment* representation are characterized by an incoherent narrative style when talking about traumatic experiences [47], with lapses of both reasoning and monitoring.

What all four adult attachment patterns have in common is that the parent's ability to balance intimacy and autonomy, support and independence, and separation/loss and togetherness has a major influence on their children's ability to cope with stress. Furthermore, a well-functioning attachment behavior system is crucial for maintaining emotional stability [48]. According to Attachment Theory, the main cause for the development of disorders is the fear of abandonment and the feeling of vulnerability when the primary caregiver is not available physically or emotionally [47, 49]. Usually, the "inner working models" of attachment patterns will be formed during the first year of life and become more and more stable during the following years [50]. While those patterns remain mostly rather invariant, they still can be influenced by a stable and healthy relationship towards a significant other such as a partner or a psychotherapist [51].

3.3. Attachment Behavior and the Palliative Situation. Patients come to Palliative Care when suffering from an incurable, life-threatening disease. It is less about saving the person's life than it is about helping and supporting them as much as possible until their death. Confronted with their own ineluctable death, the patient finds him- or herself in an extraordinarily stressful situation. As described earlier, according to the acquired attachment pattern, different related behaviors will be activated in situations of stress or of a perceived or real threat. The patient's awareness about their increasingly worsening medical condition may trigger threatening feelings of vulnerability. The physical deterioration may result in an increased need for others and thus may confront the patient with fear of dependency [13]. Attachment patterns play a crucial role in the way a patient copes with the situation of approaching death, manifested, for example, in health seeking behavior or the ability to accept and permit needed support from family members and health care providers [52]. The understanding of what lies behind a patient's behavior, wishes, and needs may lead to increased empathetic responsiveness from caregivers and thus contribute to an improvement in the patient's quality of life in Palliative Care. For example, patients having an enmeshed attachment pattern could have their emotional equilibrium maintained by very stable and predictable support [13]. Clinicians knowing and considering the different attachment patterns could both better understand and be less distracted by sometimes contradictory signals and behavior from patients with an insecure attachment pattern and could therefore employ a sufficiently elaborate care approach. Studies have shown that an appreciation of a patient's attachment pattern has beneficial influence on the patient-physician relationship and improves help care outcomes [53, 54]. Moreover, it has been shown, for example, that patients with a secure attachment pattern demonstrate significantly more successful diabetes treatment adherence than those with an insecure attachment pattern (dismissive, enmeshed, or unresolved). However, this effect could partly be attenuated by better patient-physician communication [13, 54, 55]. Results of a study conducted by Milberg et al. [3] indicate that the mediation of security to terminally ill patients (e.g., by providing a familiar environment or fostering trust in a caregiver) induced feelings of control, inner peace, and hope and therefore facilitated patients in dealing with their final parting. Thus, it can be supposed that providing a stable and secure relationship for terminally ill patients can help them to cope better with their condition. This could be explained by the fact that a feeling of security and reliability, the same as with children, can support an adult's cognitive and affective exploration behavior to address adequately existential questions which frequently arise at the end of life [56]. Furthermore, considering a patient's attachment pattern could also help the clinician to influence the success of the therapeutic relationship and thus increase the clinician's ability to grasp the patient's individual needs and wishes in order to support them for the final separation in the best way possible.

Some papers contain case reports describing the different attachment patterns in clinical situations [2, 13]. These case reports give an idea on how individuals with different attachment representations behave when they are in palliative care. The various patient reactions are specified in the following sections in order to elucidate a better understanding of a patient's needs and challenges.

3.3.1. Secure Attachment Pattern in Palliative Care. Palliative patients with a secure attachment pattern can usually talk openly about positive as well as negative aspects of their life, for example, their relationship to their parents. Memories are easily accessible and emotions are adequately expressed. They openly mourn their situation and express such feelings as fear, anxiety, or anger, which facilitates emotional relief and thus their working through the grieving process. Often, it is sufficient to accompany those patients merely by providing basic support, for example, by helping them in structuring their remaining time or by giving them spiritual support [2].

3.3.2. Dismissive Attachment Pattern in Palliative Care. Contact with patients with a dismissive attachment pattern is usually connoted by an impersonal atmosphere and relationship. Emotions are hardly ever spoken about openly; no sadness, no anger, no anxiety is verbally expressed. Their memories about childhood are usually fragmented and the relationship to their parents is idealized without plausible reason. Instead, closer questioning reveals a lack of interest and support on the

part of the parents. Such patients are likely to deal with their illness exclusively on a cognitive level, when not completely denying its consequences. Contradictory signals can be given, for example, on the one hand seeking help frequently (e.g., from nurses), while on the other claiming independence and rejecting the help offered. A therapeutic intervention should focus on suppressed feelings, for example, by mirroring latent emotions. Also, involving the patient in active participation in the treatment, for example, could help them to counter threatening feelings of vulnerability and dependency [2, 13].

3.3.3. Enmeshed Attachment Pattern in Palliative Care. Patients with an enmeshed attachment pattern often report their childhood memories in a very expansive and tiring way. Their emotional statements seem exaggerated and exalted. They usually had a very dependent relationship with their parents and are likely to maintain this scheme towards other close relatives, for example, the spouse or their own children. Accompaniment of those patients is often time consuming and stressful. The illness is accompanied by extreme senses of anxiety and worry. If emotions are expressed, they occur in the context of long and exhausting sessions. Patients with an enmeshed attachment pattern are usually very demanding, which is apparent, for example, in their high demands for therapy or their need for reassurance to the point that staff can feel overwhelmed. An appropriate intervention could consist of introducing a very structured therapy plan. Emotional predictability can help the patients to establish a secure attachment base and thus experience consistency and reliability [2, 13].

3.3.4. Unresolved Attachment Pattern in Palliative Care. It is often hard to construct a clear picture of events from the narrative of an unresolved attached person. Speech is incoherent, interrupted by burdening thoughts and unfinished sentences. Childhood traumas surface frequently in these patients' biographies and have usually never been worked through. Panic attacks, extreme anxiety, or aggressive outbursts are not unusual for them. Conversations about their emotions or feelings about their illness can be held, but information remains confusing and unclear. Often, patients with an unresolved attachment pattern have little or no family and few or no friends to rely on, and if so, relationships are very unstable and complicated. A secure bond should be established to these patients, for example, reducing their mistrust by accompanying them steadily throughout the entire process. Sensible, reliable, and attentive care can help to ease anxiety and panic attacks [2].

4. Spirituality in Palliative Care

4.1. Why Spirituality Is Relevant to Palliative Care. Being torn from everyday life and facing an illness that is incurable and life threatening, it seems natural to search for a deeper reason for one's suffering. It is a human need to search for meaning and purpose, especially when confronted with a disruption of such existential importance, one's own death. Establishing a sense of coherence in exigencies strengthens feelings of self-efficacy and control, thus providing the feeling of safety [57, 58]. Questions, needs, challenges, and distresses arising from the palliative situation address the spiritual dimension of human personality. When facing the word "spirituality," many physicians respond with a certain kind of restraint because of the word's usual religious implications. In a comprehensive understanding, however, spirituality does not necessarily refer to religious tradition and doctrine but to a fundamental search for transcendence [59]. This means that, in the palliative context, questions such as "Where am I going when death approaches?", "What will remain when I am gone?", "Was my life fulfilling?", "What am I to do as long as I am still able to?", or "Why me?" may frequently arise. Those questions can bring people into distress as well as be a resource for coping with the nearing end of life.

4.2. Spiritual Themes in Palliative Care. For the purpose of this paper, it is crucial to know the main spiritual themes patients are concerned with in order to see how these themes could be reflecting the main points of Attachment Theory. In an international metastudy on the understanding of spirituality among palliative patients, Edwards et al. [60] found seven main themes that constitute a patient's concept of spirituality. It was related to (1) "stories about the whole of life, giving thanks for life" and reflecting the central issues of their life; (2) "relationship with self" in the sense of "self-acceptance" and "self-reconciliation;" (3) "relationships with others" such as family, friends, and caregivers; (4) "relationship with nature and music;" (5) "relationship with God or a higher being" who is able to protect patients "from the fear of death and loneliness;" (6) "hope, meaning, and purpose in life," whereby themes such as continuation through future generations or the possibility of an afterlife are relevant; and (7) "religious beliefs" in the traditional sense [60]. In the context of this paper, it is worth noting that despite the fact that in the research literature spirituality is often characterized as some kind of intellectual "endowing with meaning," for the patients as well as the palliative staff members, spirituality is essentially grounded in relationships [60–63]. It is mostly not about finding monadic meaning but meaning within relationships. For example, a common spiritual concept is the meaning of family relationships. Patients see themselves as part of a broader context, the "chain of life" that connects them with previous and coming generations, giving them a feeling of coherence and belonging to something that transcends their passing life [64]. Thus, they are actually meeting the social concept of religion on a fundamental level in the same way that religion in traditional societies is constituted as a ritual community guaranteeing stable relationships and transgenerational cohesion [65]. The term "religion" itself implies relationships, since it is derived from the Latin word *religio* meaning rebond, relation, and attachment. But spirituality in the palliative context goes beyond that social function. It also refers to a feeling of being attached to nature's "circle of life," permitting reflection about the stories and central issues of their life and their relationship to self.

4.3. Spiritual Needs and Distresses. According to a study by Milberg et al. [3], palliative patients and their relatives consider the feeling of safety provided by a trusted environment or healthcare staff members as the most important factor for feelings of control, inner peace, and hope. To be facing death and therefore the totally unknown means to palliative patients an exposure to uncertainty that can easily touch the shores of fear. Hence, the feeling of safety surely is one of the main issues of a patient's psychological, psychosocial and spiritual needs. In recent times, there have been some approaches to a differentiated conceptualization and measurement of patients' spiritual needs [66, 67], although those are characterized by large heterogeneity [68]. One of the most elaborate instruments, the "spiritual needs questionnaire", categorizes patients' spiritual needs into five factors: (1) *religious needs/praying*, (2) *existential needs* (*reflection/meaning*), (3) *search attention/connection/relief,* (4) *search for inner peace and* (5) *actively connecting/giving* [69, 70]. This mainly coincides with the pattern of spiritual needs that was identified by the meta-analytical view of Edwards et al. [60] that contained three classes of spiritual needs: (1) the need to "finish business" in the sense of feeling ready to depart without regrets, to forgive, and to be forgiven, (2) the need for "involvement and control" regarding an active preparation for death, and (3) the need for "positive outlook" [60]. We should note that patients' spiritual needs imply two aspects with regard to relationships: on the one hand, a component of activity, of connecting, controlling, being involved, or seeking relief in interaction with others; on the other hand, a component of completion, introspection, seeking to "finish business," and to come to a calm and peaceful state of mind.

The spiritual distresses pointed out by Edwards et al. [60] directly refer to essential spiritual needs. The main aspect of spiritual distress, an overwhelming fear of death or feeling of uncertainty, refers to the feeling of safety that is evident throughout all spiritual themes. The other essential aspects of spiritual distress are feelings of loss that can concern the self, relationships, or the loss of meaning [60]. The experience of loss concerns relationships (to oneself or other persons, things, etc.) that cannot be given up because they are perceived as essential and indispensable and thus refers in a negative way to the aspect of completion, "finishing business," and finding peace. Feelings of hopelessness, helplessness, despair, or depression that are additionally related to spiritual distress refer negatively to the aspect of activity: losing control, confidence, or the ability of normal involvement. Feelings of anger or bitterness affect the sense of inner peace; feelings of punishment or judgment by God can be an expression of negative religious coping ([71], for a therapeutical intervention for spiritual pain; e.g., see: [72]). Religious needs, as a part of spiritual needs, however, contain the aspect of introspection (e.g., praying) as well as the aspect of activity (e.g., participation in a religious ceremony). Turning to a higher presence, such as God, is in a way an active attempt at connection and building up relationships, and is at the same time an introspection, thus serving both spiritual needs [73, 74].

4.4. Transcendence in the Palliative Context. Edwards et al. [60] found "spirituality" and "spiritual care" somehow being used synonymously by patients and healthcare providers, because both were joining in the concept of "caring for relationships." Notwithstanding the fact that any satisfactory relationship can be supportive in Palliative Care, it is important not to dilute the concept of spirituality into an all-embracing term for "relationship." In a narrower sense, spirituality always has something to do with transcendence [75], the term transcendence thereby being taken literally and not implying a metaphysical entity, as the example of the "circle of life" demonstrates. Transcendence means in a common sense any idea, expectation, hope, or fear that goes beyond the very physical existence of an individual (for the different meanings of transcendence see [76]). However, to write one's last will and testament or to prepare one's own funeral means to care for something that lies beyond one's own existence and thus can be a source of spiritual reflection. The aspect of transcendence is important to note and not only a matter of dealing with terms, because it relates directly to the situation a palliative patient is confronted with: in the end, he or she will be forced to release the bonds to related persons. Thus, as pointed out before, to "finish business" and to find inner peace are important aspects of the patient's spiritual needs. Spirituality in the palliative situation is not only about maintaining a relationship to loved ones but releasing from them at the same time. The task for relatives, friends, and caregivers is to provide company in the last stages of the patient's life, but in the end every patient has to transcend the final stage unaccompanied, alone. Thus, spirituality in palliative context is a matter of "continuing bonds" [77, 78] while simultaneously coping with separation, a concern regarding how to retain relationships that will inevitably cease.

4.5. "God" in the Palliative Context. Transcendence, however, does not necessarily imply a relationship to a metaphysical entity, to God or a higher being, but of course, it can. Asgeirsdottir et al. [64] report the finding that patients with a nontraditional ecclesiastical spirituality connect transcendent ideas mainly with the larger context of family relationships, whereas patients with a traditional ecclesiastical spirituality tend to center their transcendent relationship on God. The spiritual relationship to God can influence decision making in Palliative Care [79] and affect coping strategies [80] or be a protective factor in preventing disorders [81], whereas van Laarhoven et al. [82] have shown that an image of a nonpersonal higher being can be as important a source of spiritual coping as a personal one. If God in the patient's view is not so much an abstract principle, but someone who personally relates to people, the spiritual relationship in the palliative context can be established in a personal way, too. God can become a personal addressee of the patients hopes, sorrows, and complaints [83], and thus the patient's spirituality can initiate an "internal dialog" of prayer and the verbalization of needs and distresses. It is a frequent occurrence that palliative patients find themselves unable to express all of their fears, spiritual pains, or "unrealistic" hopes,

because they feel obligated to treat their relatives with special care and not to intensify their grief. Some palliative patients may feel shame, or even guilt, at perceiving themselves as a long-lasting source of suffering, grief, and trouble to their related persons and thus do not want to cause further problems by not dying in "the right way" [84]. Palliative Care must never lose sight of social distress and pressure, however, which of course are always a dimension of human relationships. From the patient's perspective, the spiritual relationship to God can compensate unexpressed needs as well as be a protected, perhaps secret area for exploring one's own spiritual ideas. Thus, in the patient's view God can take the role of a "transcendent caregiver" and "relative" who can accept the patient's distress. The spiritual relationship to God has been addressed in the research literature from an Attachment Theory perspective by the concept of "Attachment to God" [33, 34], whereas research on spirituality in Palliative Care has yet to be adopted as an area of inquiry in its own right. Granqvist et al. [38] found the spiritual relationship to God to be an important influential factor on the individual attachment working models and attachment patterns. In this way, the spiritual relationship to God can be a corresponding expression of the experiences an individual has had with their caregivers: God is perceived as punitive and distant or nurturing and close when the relationship to the parents or related persons was experienced accordingly [35–37]. While being discussed more controversially, the relationship to God can also compensate for negative attachment experiences [38]. In whatever way formed, a spiritual representation of God as being close and nurturing can provide a secure base in the palliative context and thus be a transcendent companion when death approaches, whereas a punishing or fearful representation could be a source of spiritual distress and threat.

In the next section, we will discuss how spiritual relationships can be conceptualized in the light of Attachment Theory and which implications this concept entails for Palliative Care.

5. Attachment Theory and Spirituality in Palliative Care: Analogies

5.1. Theoretical Implications. What do the concepts of Spirituality and Attachment Theory have in common? In our view, one central issue arises in both concepts: establishing a dialectical balance between security and separation. According to the responsiveness of the primary caregiver (and later, of other close persons), different inner working models or "mental representations" of attachment are built during the first year of life and eventually modeled over the lifetime according to later experiences [85]. Bringing someone back on a mental basis by representing a physically absent person requires a high faculty for abstraction and is a developmental task during the early years of life [86, 87]. Hence, for infants, the caregiver has to be physically present, for older children and adults a caregiver can also refer to a mental representation, for example, a transcendent figure. If an individual succeeds in establishing and modeling mental representations, he or she obtains a secure base which plays a crucial role in self-regulation [42]. On the one hand, the developmental task consists of establishing a healthy exploration behavior to foster an open approach to the environment; on the other hand, a healthy attachment system helps to activate resources for maintaining or regaining a stable emotional state in the face of threatening or stressful situations. Following the ideas of Bowlby, exploration behavior and attachment behavior are antagonistic opponents. Individuals can only explore their environment when their attachment system is deactivated. Vice versa, exploration behavior is deactivated when attachment behavior is activated, that is, when the person actively seeks the protection of a caregiver. From the perspective of a child's development, these antagonistic behavior systems are dialectically mediated: infants can only explore their environment and thus overcome the symbiosis with their primary caregiver(s), when at the same time they feel they can rely on a secure base.

Two different terms are used in Attachment Theory to describe the feeling of security in the attachment system. Attachment behavior is activated in a threating or stressful situation, while at the same time exploration behavior is deactivated. The individual seeks safety and is not interested in any kind of exploration. In the context of these situations, resources for reassurance and calming are called a "safe haven". According to attachment theory, this can only be provided by primary caregivers such as the parents. The term "haven" denotes that the individual takes a "step back" towards a caregiving attachment figure (enters the port) or, returning to the term explained earlier, engages in a "religio" (rebond, relation, attachment). In this paper, we assume with regard to our discussion of the concept of spirituality that a "safe haven" can be provided by an external reference, that is, a real person, as well as by an internal reference (see Figure 1). The internal reference itself can refer to two different types: an immanent internal reference, for example, representations of ideals, self-image, mother or father image; and a transcendent/spiritual internal reference, for example, transcendent figures such as God. These images provide a possible consolation and feeling of security for an individual in a catastrophic situation, and thus the stabilizing function of a transcendent figure need not depend on its real presence. A symbolic reference, for example, a cross, or its mere representation could be enough.

The second aspect of security relates to situations in which there is no perceived threat, or in which consolation had been successful; thus, attachment behavior is deactivated while exploration behavior is activated. In such situations, exploration is possible if individuals can relate to a "secure base" from which the environment can be explored. As shown in Figure 2, a "secure base" can be provided by an external as well as an internal reference. The internal reference represents an internalized secure base, the "inner working model," which is built in the course of an individual's development and that serves as a regulating resource whenever the caregiver is not present. This is made possible by a mental representation of the caregiver that has a stabilizing and supporting influence, even when that caregiver is not physically present. The internal reference is

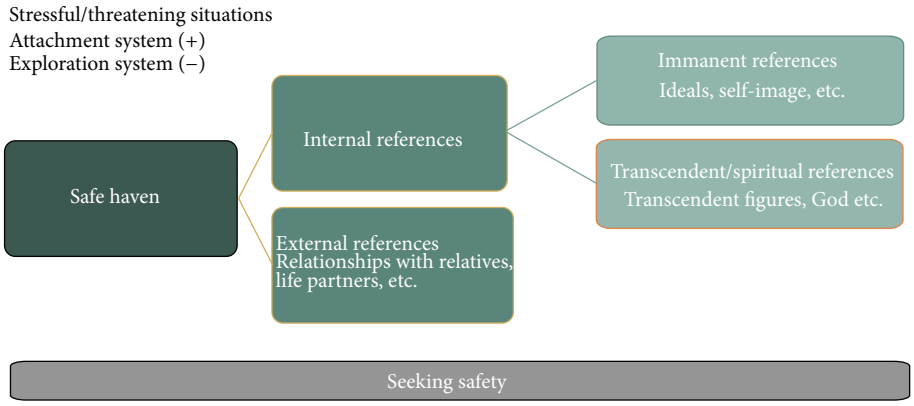

Figure 1: Seeking for safety in stressful/threatening situations.

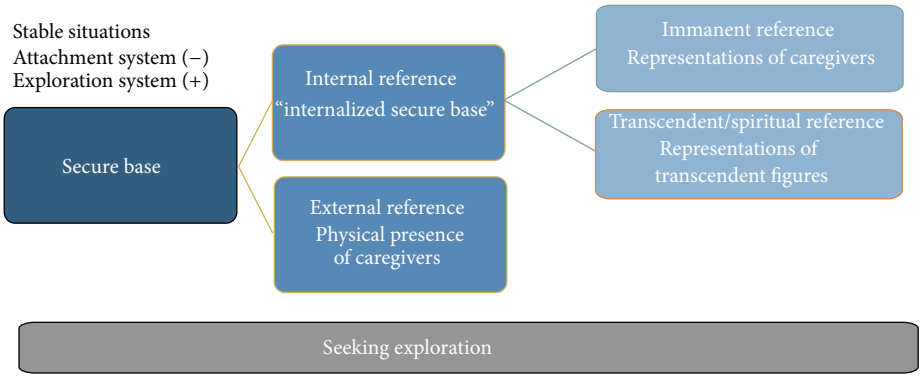

Figure 2: Seeking for exploration in stable situations.

in turn divided into immanent and transcendent references of representations. The caregiver function that had provided a feeling of security has now changed: while before in the situation of the "safe haven," the caregiver was the goal of the activated attachment behavior, the caregiver now represents the starting point for exploration behavior.

This starting point allows different modes of exploration, as shown in Figure 3. The external orientation refers to the exploration of the physical environment, other people, and so forth. The internal orientation—which surely is more relevant for the palliative situation—can again be divided into an immanent and a transcendent or spiritual orientation. The immanent orientation implies exploration of the self, inner thoughts, ideas, questions of meaning, and so forth. Transcendent/spiritual orientation concerns questions of afterlife, spiritual meaning of life, religious questions, and so forth.

We now can localize spirituality in the theoretical framework of Attachment Theory: spirituality, as a simultaneous search for a secure relationship as well as transcendence, can be conceptualized as a variant of attachment behavior. Spiritual representations can serve as an aspect of security in threatening situations, whereas the spiritual search for transcendence can be conceptualized as a part of exploration behavior. Thus, spirituality plays a crucial role in the dialectic of security and exploration. But what does it mean for Palliative Care?

In our view, the aspect of spirituality as a certain form of attachment behavior pertains directly to the demands and special qualities of the situation that a terminally ill patient is confronted with.

As mentioned earlier, the palliative situation is an extremely threatening one in which attachment behavior is activated. The patient's spirituality can serve as a source of consolation and reorganization and can help them to regain strength and emotional stability. In the clinical situation, it is thus important for caregivers to be able to recognize a person's current state within the attachment system. If an individual's attachment behavior is activated, he or she will likely—in a manner depending on their specific attachment pattern—seek a "safe haven" in which they can deactivate their attachment behavior. Spirituality seems to be an important resource for this task. It can be hypothesized that patients in this situation will be less likely to explore or engage in spiritual reflection about new and perhaps unknown aspects of their spirituality; they rather tend, we assume, to relate to the better known aspects of their spirituality. Thus, it can be important to know a patient's spiritual orientation in order to support a better mediation between external and internal

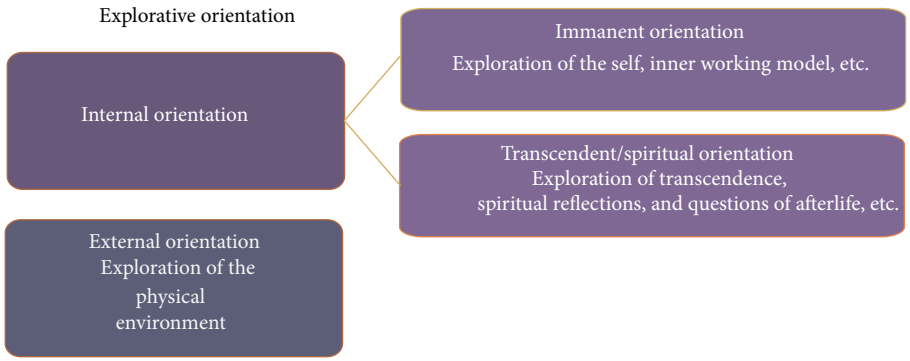

Figure 3: Explorative orientation.

representations. Religious symbols, prayers, conversations, and so forth can support this mediation and strengthen the consoling function of spiritual representations.

Perhaps less obvious is the aspect of exploration in Palliative Care: patients in the palliative context are confronted with the totally unknown aspect of their own death, an experience that transcends the realm of their known relations. This "unknown" must not only be a source of anxiety and insecurity, forcing the patient into a rear-guard action, but it can also be a challenge for exploration. The confrontation with one's own death is thereby not so much a question of social exploration or orientation in the physical environment. Death as the ultimate unknown and mystery affects the domain of transcendence and therefore of spirituality. Thus, it is not surprising that the necessity to reflect on spiritual themes takes on greater significance when one is confronted with a life-threatening illness and the possibility of one's own dying [88, 89]. Spiritual reflection should not aim for empty promises or placation, but it seems to be more the adequate answer to the peculiarity of the situation that palliative patients find themselves in. As will be shown in the following examples, health caregivers should not only be able to recognize but also support situations in which the attachment system is stabilized and the exploration behavior is activated. A person's spiritual reflections do not necessarily indicate a need only for security, but it may also indicate a sense of curiosity and an engagement in exploration of the unknown.

In the palliative context, spirituality refers to both aspects of attachment behavior: the aspect of security as well as the aspect of exploration. As described earlier, exploration in the spiritual dimension means interaction with transcendence. This interaction with transcendence can occur on an intramundane level, for example, in drawing up the will or in seeking a meaningful position in the "chain of life." It can also take place on an extramundane level and, for example, contain representations of life after death, or the beyond, and so forth. (of course the opposite of these representations can be possible as well, by rejecting the acceptance of such representations). Successful exploration behavior in the palliative situation does not mean having a clear and polished position toward transcendent questions but rather implies an anxiety-free openness toward those questions—by whatever means they are answered or not. A secure base in relationships that are perceived as being steady and protective forms the foundation of transcendent exploration. There is no doubt about the crucial role of relatives, friends, and caregivers who can mediate the patient a feeling of security and comfort and thereby activate and support the resources the patients need to confront their own death. Equally important, though, are the internal references—like having a stable relationship to oneself or to transcendent figures—from which the patients can experience feelings of security and boundedness according to their attachment pattern. In the context of the palliative situation, the relationship to transcendent figures gains a particular relevance. It would be insufficient to conceptualize the spiritual relationship to transcendent figures only as a mental representation of human relationships [90]. For a patient, the spiritual relationship would then only be a pale reflection of perceptible and tangible interactions. But the representation of transcendent figures, for example, God, concerns the aspect of transcendent exploration as well as God itself implies the unknown and uncertain. So to speak, God is "resident in two worlds," being perhaps the most intimate confidant and a totally unknown one at the same time. In the palliative situation, this makes the position of the spiritual relationship to transcendent figures exceptional, figures who can be intermediaries between the secure and the unknown, between continuation and transcendence. Without any doubt, the spiritual relationship and transcendent exploration can also be sources of anxiety and distress. Palliative caregivers have to keep a patient's attachment pattern in focus in order to understand in what ways it may influence the patient's manner of structuring attachment and exploration behavior.

5.2. Practical Implications. The concept can help to identify the patient's attachment signals and to provide an adequate response. Palliative treatment, in considering Attachment Theory and Spirituality, has to take into account two aspects of attachment behavior: initially, it must recognize the fundamental situation of the patient. Is the patient in a situation of threat and thus is his or her attachment pattern highly activated? In this case, it is important to establish a safe atmosphere and to provide a stable presence in order to reassure the patient and restabilize their attachment behavior.

Or is the patient in a situation of stability that gives him or her the possibility to engage in exploration, for example, spiritual reflection? In that case, it would be important to provide a secure base, but not to disturb the patient's exploration—due to the fact that spiritual reflection does not necessarily imply thoughts of consolation, but can have dark and unsatisfying implications. The task is to transform fear into security, in order to make the activation of the exploration system possible. In this way, the patient may find resources in their internal immanent or transcendent representations that will help them to cope with situations of fear. The other aspect concerns the different attachment patterns. Palliative Care, as we described earlier, must take into account the different ways in which a person organizes relationships and expresses needs. We now offer some examples from clinical praxis in order to illustrate how the concept can help to understand patient needs.

Earlier, we said that the patient's own spirituality could be a source of anxiety. This can be shown by the case study of a patient who suddenly started having panic attacks a few days before his death [91]. He reported that he was frightened and that nothing in his life had been of any value. He continued that nothing he created would remain, that he did not believe in God or any other higher power, but rather that life would just end; there would only be darkness and emptiness. This thought frightened him again, so that finally he had to be given a strong sedative which continued to be administered until his death [91]. In our concept, the patient found himself in a fearful and threatening situation that highly activated his attachment system. His fears were about the darkness and emptiness which would overcome him upon death, as well as the senselessness of his life, and thus affected the aspect of transcendence in a negative way. In this situation of fear, the patient longed for a safe haven, but he could not rely on a secure immanent or spiritual representation that would have given him consolation. He was not indifferent to his immanent or transcendent afterlife, but he was not able to explore this aspect without fear: the absence of a safe haven means the absence of a secure base for exploration, as well. Unfortunately, the patient's physical condition made it impossible for him to engage in long conversations about his spirituality. Perhaps, it would have been helpful to have talked with him about the value and the meaning of his life while he was still capable of doing so. Also, a gentle exploration with him, together with another person, about what might happen upon his death might have helped this patient not to wait with this reflection until just before his death; the person could have asked him what his belief of "darkness" meant to him personally, since that belief obviously frightened him so much. Perhaps he would have found a safe haven and, later on, a secure base for fearless exploration of his spiritual thoughts. Possibly, this patient seemed self-reliant due to his attachment style and did not ask for help until he could not hold back due to his panic attacks.

Petersen and Koehler [2] report a case of a 75-year-old woman with a secure attachment pattern. She was brought to the palliative unit with a liver carcinoma. In the beginning, she felt strong physical pain but was able to describe it precisely so that the doctor could help her effectively. During the daily conversations with the doctor, the patient talked openly about her life and valued negative as well as positive experiences. She had felt that in her childhood "both of her parents were available for her all the time" [2]. She experienced rough times during the war and in the following years but was able to build a new and satisfying life. She was happily married until her husband's death some years ago and had established a warm and close relationship to her son and his family. All throughout her stay in the palliative unit, she was surrounded by her family and close friends, who provided a secure base for her exploration of the self and of questions of transcendence. Daily conversation helped her to reflect on her life and to value the way she had lived it, including good as well as bad episodes. She could talk openly about her anxiety to die and was able to mourn. The conversations about her life, her illness, and her death, including all the emotions that were experienced in the process, helped her to accept her situation. Before her death, she asked for spiritual support from a priest. Finally, the patient was able to let go and died reconciled and in a state of calmness.

In contrast, persons with a dismissive attachment pattern may seem indifferent to their illness, but in fact they feel fear and anger that they do not know how to cope with. Transcendent exploration may be performed in an impersonal and distanced way, indicating no personal or intrinsic interest. Nevertheless, it is important to recognize the emotions of fear and forsakenness hiding behind the cover of distance and to encourage and support exploration behavior sensitively. A case study of a person with dismissive attachment behavior is reported by Tan et al [13]. A 47-year-old woman was admitted to the palliative-care unit with ovarian cancer. The patient had been self-reliant and had avoided close relationships throughout her life. Instead, she was very devoted to her work. Her fear of dependence was apparent in her ambivalent behavior: on the one hand demanding help and more support from the staff, on the other hand rejecting treatment when it was offered. Those contradictory signals became not only a challenge for the staff, but also made the patient suffer more than necessary, as well. Reluctantly, she agreed to accept individual counseling. It turned out that she wished to die and did not see any point in her continued living; at the same time, her spiritual beliefs prevented her from ending her life deliberately. Based on the understanding of her dismissive attachment pattern, health care providers were instructed to ensure the patient's participation in treatment as much as possible. In terms of spiritual needs, the counseling sessions helped her to structure her spiritual exploration. She began to communicate her feelings—which led to less contradictory signals—and to accept and better value human relationships. Instead of dying alone, as she had wished to at the beginning, she was able to accept support from her mother and her friends, who were beside her when she died [13].

Persons with an enmeshed attachment pattern may not exhibit any exploration behavior at all, because confrontation with their own death activates strong feelings of fear and panic. Therefore, constantly animating them to explore may trigger anxiety. Possibly, a careful and sensitive approach is indicated that takes the patient step-by-step toward a

tolerable level of exploration. Tan et al. [13], for example, describe a 55-year-old woman with terminal cancer. She showed strong feelings of anxiety toward her death, concomitant with significant panic attacks. The patient reported that while in her childhood her physical needs had always been satisfied, she had experienced a lack of emotional support. She always had been insecure, despite the success in her career and loving friends and husband. At the slightest change of her symptoms, the patient saw herself confronted with catastrophic thoughts and intense fears of death. The frequent attempts at reassurance and intensive attention seemed to calm the patient's fears for a short time, but to the point that some caregivers felt overwhelmed by the patient. Based on the knowledge of the patient's attachment pattern, a structured plan was elaborated which had to be strictly followed. The structure helped the patient find a certain regularity in her treatment, which enabled her to control her fears better. Regular meetings with family, physicians, and psychiatrists helped her to express her anxiety to die [13].

Patients with an unresolved attachment pattern expectedly show very varied and ambiguous exploration behavior. Besides continuous and sensitive spiritual support, it is important not to be misled by the patient's alternating and possibly aggressive behavior, but instead to support the patient in structuring their transcendent exploration. Petersen and Koehler [2] give the example of a 68-year-old woman who was admitted to the palliative care unit with untreated breast cancer. The patient was very aggressive and defensive, allowing little to no treatment in the beginning. After a few days, and consistent but gentle approaches towards her, she agreed to show her open breast wound and allowed it to be bandaged. Step by step, the patient began to develop some trust toward her caregivers. When asked questions about herself and her life, she often fell into a confused or aggressive state of mind; sometimes, her answers were clear and structured, but no more words than necessary came over her lips. Her childhood memories were fragmented; she often did not even finish her sentences when asked about it, but rather fell into a trance-like state. Nevertheless, it became clear that she had been maltreated when she was little, and that in this short amount of time it would be impossible to provide sufficient therapy to ease her anxieties. Her extreme anxiety led to emotional outbursts; sometimes she cried, and sometimes she became highly aggressive towards staff members. Her caregivers tried to provide the patient with a sense of security through reliable and time-intensive care. A few days before her death, the patient fell into a serious delirium that could be treated successfully.

Although it is obviously helpful to know a patient's attachment pattern and spiritual orientation, there are difficulties in their assessment in the palliative context. When patients enter the palliative care unit, they usually get admitted when their health condition is declining, and they often stay only for a couple of days, if their health condition gets better again. An AAI may be a possible evaluation instrument, but it is very time consuming and complex and can be very exhausting for the patient. The AAP, on the contrary, seems less intrusive and also takes a shorter time to evaluate, although reliability is just as good as the AAI. Therefore, it seems to be a more accurate instrument in the context of palliative care. First trials to implement the AAP in the palliative-care context have been made by the working group of Hloucal et al. [92]. Although an important element, the spiritual dimension of attachment is a problematic aspect in the evaluation of the AAP. Many spiritual themes in the AAP (which fall into a certain pattern of evaluation) are classified as being "spooky," and thus indicate traumatic experiences. This could be a serious problem, since first results seem to indicate that palliative-care patients often return to the spiritual dimension during the interview as a secure or insecure base of attachment. A patient will thus easily be classified as "disorganized," even when his or her spiritual resources may be helpful and a source of strength [91]. These findings confirm the importance of the spiritual dimension of attachment: if this dimension is not integrated in the concept of attachment, it could lead to wrong assumptions about one person's attachment pattern and thus misjudge an important resource of coping with the own death. Further research has to show how Attachment Theory and spirituality can be integrated not only on a theoretical base but in terms of measurement as well.

6. Conclusion

The aim of this paper was to discuss and explore the interrelation between two concepts which are important to Palliative Care, namely, Attachment Theory and the concept of spirituality. We found that both concepts have two aspects in common: the aspect of security and the aspect of exploration. More precisely, spiritual relationships can be considered analogous to the concept of "safe haven" and "secure base" in Attachment Theory, whereas the spiritual search for transcendence as analogous to "exploration behavior." For the category of security as well as for the category of "exploration," two ideal-typical subcategories have been, respectively, conceptualized: an external and an internal division. The internal subcategories can in turn refer to an immanent internal and a transcendent/spiritual division. This conceptualization seems important in Palliative Care, because spirituality cannot be seen as a monadic superimposed variable that individuals may or may not refer to, but more as a basic need of all humans constituted as a certain expression of attachment behavior. Spirituality can be an adequate answer of attachment behavior to the peculiarity of the palliative situation. Spiritual seeking as a part of attachment behavior is activated and becomes especially relevant when an individual is confronted with a highly stressful situation, such as a palliative patient, is confronted with. Following the line of reasoning in this paper, this would imply some adjustments in Attachment Theory. For example, in the Adult Attachment Projective Picture System (AAP)—that is a commonly operationalized assessment tool—a person referring to a transcendent internal reference would likely be classified as having an insecure attachment pattern, even when perceiving it as a source of support and strength [91]. As we discussed earlier, positive effects of palliative treatment

adequate to attachment have been shown. Knowing how to support and activate the patient's spiritual exploration may enhance this effect and could thus add to the patient's end-of-life quality. In the end, no caregiver, relative, or friend can take the confrontation with transcendence off the patients shoulder. Transcendence will never be answered in a completely satisfying way, but it will always refer to an unknown [93]. Transcendent exploration can only be carried out successfully in an individual way. At the beginning, as well as at the end of life, we face an unknown that frightens us and that we must confront, preferably from a secure base.

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Review Article

Religiosity and Spirituality and the Intake of Fruit, Vegetable, and Fat: A Systematic Review

Min-Min Tan, Carina K. Y. Chan, and Daniel D. Reidpath

Jeffrey Cheah School of Medicine and Health Sciences, Monash University, Sunway Campus, Jalan Lagoon Selatan, 46150 Bandar Sunway Selangor Darul Ehsan, Malaysia

Correspondence should be addressed to Min-Min Tan; minmin.tan@gmail.com

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Objectives. To systematically review articles investigating the relationship between religion and spirituality (R/S) and fruit, vegetable, and fat intake. *Methods*. PubMed, CINAHL, and PsycInfo were searched for studies published in English prior to March 2013. The studies were divided into two categories: denominational studies and degree of R/S studies. The degree of R/S studies was further analyzed to (1) determine the categories of R/S measures and their relationship with fruit, vegetable, and fat intake, (2) evaluate the quality of the R/S measures and the research design, and (3) determine the categories of reported relationship. *Results*. Thirty-nine studies were identified. There were 14 denominational studies and 21 degree of R/S studies, and 4 studies were a combination of both. Only 20% of the studies reported validity and 52% reported reliability of the R/S measures used. All studies were cross-sectional, and only one attempted mediation analysis. Most studies showed a positive association with fruit and vegetable intake and a mixed association with fat intake. *Conclusion*. The positive association between R/S and fruit and vegetable intake may be one possible link between R/S and positive health outcome. However, the association with fat intake was mixed, and recommendations for future research are made.

1. Introduction

Unhealthy diet is a major risk factor in the development of noncommunicable diseases (NCD), which are responsible for about 63% of deaths globally [1]. One of the main characteristics of a healthy diet is the regular consumption of a variety of fruit and vegetable, which is associated with a lower risk of some cancers, coronary heart disease, hypertension, and stroke [2, 3]. About 1.7 million deaths worldwide are attributed to a low fruit and vegetable intake [4]. In addition, about 14% of gastrointestinal cancers, 11% of ischemic heart disease, and 9% of stroke worldwide are also attributable to low fruit and vegetable intake [5]. Another important dietary factor related to health is fat intake. A high fat intake is associated with higher risk of coronary heart disease, diabetes, and cancers, the common NCDs [6–8].

The World Health Organization recommends a daily intake of at least 400 g (5 servings) of fruit and nonstarchy vegetable, and fat that is less than 30% of total dietary energy, of which less than 10% is from saturated fat and less than 1% from transfat [9]. However, due to urbanization and westernization, many countries that traditionally enjoyed high fruit and vegetable and low dietary fat consumption are moving towards a higher fat, lower fiber diet [10]. The global burden of NCD is predicted to increase further because of this global transition in lifestyles [10].

Research has shown that religion and spirituality (R/S) has a positive association with health [11]. About 80% of the studies looking at the relationship between R/S and health examined mental health [12], showing a positive association with wellbeing, self-esteem, and optimism [13–16]; lower scores of depressive and suicidal symptoms [17, 18]; and lower stress level [19–21]. Numerous studies have also reported a positive association between R/S and physical health, including an association with lower all-cause mortality and lower rates of diet-related diseases such as hypertension, cardiovascular diseases, and cancer [22–26].

The study of the relationship between R/S and health remains relatively novel. Initially it was not well accepted because it was thought that it is impossible (within a positivist

framework) to study R/S scientifically. However, starting in the early 1990s, with the improvement of methodology, the study of religion and health has been increasingly recognized as a legitimate domain of scientific inquiry and is becoming more established [27]. Between 2000 and 2010, at least 21,000 quantitative studies examining the relationship between R/S and health have been published [28], covering a wide range of health outcomes and behaviors.

In the research of R/S and health, one of the major issues is defining religion and spirituality in a way that supports their measurement. Historically the notions of religion and spirituality have often been used interchangeably; however, recently there has been a trend towards distinguishing the two concepts [29]. Broadly, religion includes "beliefs, practices, and rituals related to the Transcendent or the Divine" [30], while spirituality is concerned with the "connection to that which is sacred, the transcendent" and also "a search for the transcendent and the discovery of the transcendent" [28]. Religion tends to convey a negative impression that it is related to organized religion and theological rigidness, while spirituality is viewed more positively and is associated with personal experience of the transcendent. However, Koenig recommends the use of spirituality in the context of religion, that is, those who are spiritual are "deeply religious" [30].

The most commonly used R/S measure has been the single-item measuring religious attendance because of its "ease of use" [31]. In most of the studies that have used a religious attendance measure, most have also found that it is positively associated with better health outcomes [32]; for example, it has been associated with lower mortality rates [33, 34], better adoption of health behaviors [35, 36], more life's satisfaction [37], and a lower prevalence of hypertension [24]. However, in many studies, R/S data were collected as part of a larger study, and this can be a drawback [38, 39]. It is generally accepted that R/S is a multidimensional construct [40], which means that a single-item measure such as religious attendance will be insufficient to capture all dimensions except possibly in the most general sense. This also limits insights that can be gained about the relationship between R/S and health. Recently, more specific scales have been developed to measure different dimensions of R/S [40].

Religion is considered important to many people around the world. One recent survey estimated that 51% of the population in the world believe in god(s) [41]. Another survey conducted in 143 countries found that the majority of people, especially those from developing countries, reported that religion was an important part of their lives [14].

One of the proposed mechanisms by which R/S benefits health is through the adoption of religious practices that are also health-promoting [42]. Many religions view the human body as sacred and include specific prohibitions against unhealthy behaviors, which are considered irreverent and not only harmful physically but also spiritually. This view, however, needs to be tempered by the fact that some religious adherence *may* also result in poorer health outcomes, such as extreme asceticism. Notwithstanding that, numerous studies have shown that R/S is negatively associated with many harmful behaviors such as smoking [43, 44], alcohol drinking [45, 46], substance abuse [47, 48], and risky sexual activities [49, 50] and positively associated with good health behaviors such as the use of preventive health care services [51, 52], physical activity [36], and seat belt use [53].

Certain health practices are endorsed and encouraged by most religions, such as healthy eating. In fact, most religions have specific dietary guidelines regarding what food to eat or avoid. These guidelines fall into two categories. The first category involves "a temporal abstinence from all or certain foods (fasting)"—the majority of religions have fasting guidelines, for example, Muslims fasting during Ramadan and oriental orthodox Christians fasting before Holy Communion. The second category relates to "stable and distinctive dietary habits that differ from the general population"; for example, Muslims consume halal meat and Jews consume kosher meat [54]. The main purposes of these dietary guidelines are for spiritual advancement.

R/S might encourage the consumption of fruit and vegetable and discourage fat intake (especially animal fat) because of specific doctrines of a particular religion. For example, the teaching of Ahimsa (do no harm) in Mahayana Buddhism and Hinduism encourages their adherents to be vegetarians in order to cultivate compassion, since eating animals requires slaughtering. Nonvegetarian food is considered impure and could hinder one's spiritual development [55]. The Seventh-day Adventists are encouraged to be vegetarians, as part of a religious duty to maintain a healthy body [56]. Even in religions that do not have specific dietary guidelines or restrictions, the teaching that the body is sacred might encourage the adoption of healthier behaviors, including a healthier diet.

The long term dietary practices required by certain religions could be a protective factor in preventing diet-related diseases. For example, the Seventh-day Adventist Church and the Church of Jesus Christ of the Latter-day Saints both encourage their believers to consume more fruit and vegetable and less fat. There is evidence from observational studies that Adventists, Mormons, and adherents of religions with strict dietary guidelines have healthier diets, better physical health, and longer lifespans than the general population [57, 58].

Notwithstanding the importance of food in many religions, there is a surprising scarcity of research on the relationship between R/S and diet. According to the first edition of the Handbook of Religion and Health [59], the most comprehensive review about R/S and health to date, there were only seven studies on R/S and diet before 1990. The second edition of this Handbook (2012) reviewed 21 studies about R/S and diet between 2000 and 2012. Sixty-two percent showed a positive association; that is, a higher measured R/S is associated with a healthier diet.

A few other reviews also identified generally positive associations between R/S and a healthier diet. Groen and van der Heide [60], for instance, reviewed the role of dietary cholesterol in the development of atherosclerosis and coronary thrombosis among adherents of different religions. They found that Jews and vegetarian Trappist monks have a lower cholesterol level than the comparable groups. Shatenstein and Ghadirian [61] reviewed the differences in health behaviors, including dietary practices, among different religious groups.

In another review, Sarri et al. [62] examined religious dietary practices and physical health among Muslims, Seventh-day Adventists, orthodox Christians, Jews, Buddhists, and a few other religions. There was an inconsistent finding about the influence of Ramadan fasting on physical health among Muslims and an overall positive relationship between religious dietary practices and health in other religions.

However, to date, there has been no review that examined the relationship between R/S and specific dietary intake. The past reviews have only examined R/S and diet in general. Thus, the purpose our review was to address this gap and systematically review the relationship between R/S and fruit, vegetable and fat intake. We hypothesized that R/S was positively associated with fruit and vegetable intake, and negatively associated with fat intake.

2. Methods

2.1. Search Strategy. PubMed, CINAHL, and PsycInfo were searched by using two categories of key terms: religious key terms (religion, religiosity, religiousness, and spirituality) and dietary key terms (diet, food, food habits, health behavior, food preferences, eating, nutritional status, fruit, vegetable, fibers, and fats). The Boolean operator "OR" was used to combine key terms within each category, and "AND" to combine both categories. In PubMed database, the "NOT" operator was also used to eliminate studies related to clinical trials, fasting, reviews, systematic reviews, case reports, editorial, and comment. The full search strategy can be obtained from the authors.

2.2. Inclusion Criteria. To be eligible for inclusion, a paper had to fulfill the following criteria.

(1) The research analyzed the direct association between at least one quantified R/S measure and at least one quantified measure of fruit and vegetable or fat intake. Thus, qualitative studies and case studies were excluded.

(2) The paper was published in English and in a peer-reviewed journal before 1 March 2013.

2.3. Exclusion Criteria. A paper was excluded if

(1) R/S and fruit, vegetable, and/or fat intake were included but their relationship was not examined directly (e.g., parents' R/S and children's intake)

(2) only overall health/dietary behavior was assessed but not fruit, vegetable, and/or fat intake specifically

(3) R/S was included as part of the measure of another variable (e.g., social support) but the direct relationship between R/S and fruit, vegetable, and/or fat intake was not assessed;

(4) the focus of the paper was fasting and/or eating disorders;

(5) the paper examined *only* serum levels of nutrients and not direct intake. Serum level or biomarkers of nutrients might not be an accurate indicator of fruit, vegetable, and fat intake since the nutrients could be obtained from supplements;

(6) the paper examined fiber intake but *did not* specify its dietary source as fruit and vegetable. Fiber could be obtained from supplements and nonfruit or vegetable food source such as grains.

The references and bibliographies of the papers were also examined to identify other relevant articles. Previous reviews of the relationship between diet (generally) and R/S were also examined [28, 59, 61, 62], and in one case the review author was contacted for his list of papers, which were not detailed in the review itself.

3. Analysis

The frequency and types of fruit, vegetable, and fat intake measures used were first examined. The measures were categorized into dietary records, 24-hour dietary recall, food frequency, brief dietary assessment methods, and dietary history. A dietary record is a detailed record of all food and drinks consumed over a period of time by a respondent; in 24-hour dietary recall, a respondent is asked about the food and drinks he/she consumed during the past 24 hours; a food frequency questionnaire is a list of commonly consumed food that could be selected by respondents; brief dietary assessments are used to estimate the intake of a nutrient or a type of food but do not assess overall diet; dietary history assesses dietary patterns over time [63].

The studies were divided into two categories: (1) denominational studies that compared fruit, vegetable, and/or fat intake between members of different religions, or denominations within the same religion, or between a religion with the general population and (2) degree of R/S studies that examined the degree of R/S and its association with fruit and vegetable and/or fat intake. The two categories were analyzed separately.

The analyses of degree of R/S studies were guided by Rew and Wong [64] and Wong et al. [65]. First the categories of R/S measures were analyzed. The classification scheme was based on Wong et al. [65], which is a modification of Hackney and Sanders [66]. There are six categories: institutional (social and behavior aspects of R/S e.g., attendance and social support), ideological (R/S beliefs e.g., importance of religion), personal devotion (personal and internalized devotion, e.g., private prayer), existential (measures that are spiritual but not religious, e.g., spiritual wellbeing), multidimensional (examined more than one category of R/S), and generic (e.g., one-item measure that asks about how religious are the respondents) [65]. The relationships (positive (+), negative (−), mixed, or none) between R/S measures and fruit, vegetable, and fat intake were identified.

The quality of R/S measures was assessed by examining whether their validity and reliability were reported. The number of studies that used single-item measure was also examined. Many R/S and health studies relied solely on the use of single-item measure of religious attendance, which has its limitations in health research [38]. The quality of research

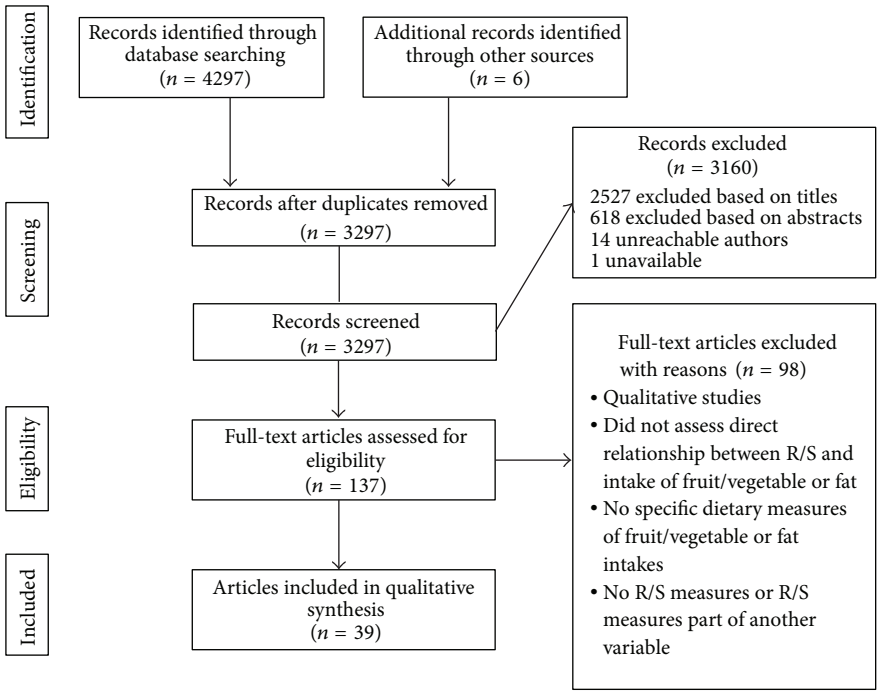

Figure 1: Articles selection process.

design (control for covariates, utilization of longitudinal data, and investigation of mediators) was assessed [64]. The studies were also categorized based on their reported relationship between R/S and fruit, vegetable, and fat intake.

4. Results

Out of the 3298 potentially relevant papers identified by the database search strategy, 32 papers fulfilled the inclusion criteria. An additional seven papers were obtained through cross reference of included papers and previous reviews. Figure 1 shows the flowchart of article selection process. All of the 39 studies were cross-sectional. There are 14 denominational studies that do not contain other R/S measures, 21 studies that examined only degree of R/S, and four that included both denominational differences and degree of R/S. See Table 1 for the table of characteristics of the 39 studies.

The majority (77%) of the studies were conducted in the United States. Five were conducted in other Western countries (two in Australia (5.1%), and one each (2.6%) in Scotland, Slovakia, and Canada), two in Israel (5.1%) one in Japan (2.6%), and one in South Korea (2.6%). Four studies included only female samples. Eleven studies were race-specific; seven examined African Americans, two examined non-Hispanic Whites, one examined Koreans, and one examined Japanese. Thirty-two of the studies (79.4%) included samples that were predominantly Christians. Four studies examined Jews and three examined Buddhists.

4.1. Assessment of Dietary Intake. Out of the 39 studies, 12 examined fruit, vegetable, and fat intake, 14 examined only fruit and vegetable intake, and the other 13 only examined fat intake.

Table 3 shows the categories of dietary assessments of fruit, vegetable, and fat intake. Among the five categories of dietary assessment methods, brief dietary assessments were the most used, followed by food frequency. The most used brief dietary assessment was the Fat- and Fiber-Related Behavior Questionnaire [67], which was included in four studies, followed by the National Institute's 5-A-Day Survey [68], which was included in three studies. Three studies used more than one dietary assessment method, and two used more than one brief dietary assessment.

4.2. Denominational Studies. A total of 18 studies were analyzed. Eight (44%) of them compared Seventh-Day Adventists with the other denominations (Catholics, Methodists, and Mormons) or non-Adventists, three compared fruit, vegetable, and fat intake, three compared only fruit and vegetable intake, and two compared only fat intake. Among the six studies that compared fruit and vegetable intake, three (50%) showed that Adventists consumed significantly more fruit and vegetable than members of other denominations and non-Adventists, one (16.7%) had positive but nonsignificant association, one was nonsignificant in vegetable intake but significant in higher fruit intake, and one showed that Adventists consumed less deep fried vegetable.

Five studies compared total fat intake between Adventists and non-Adventists. Two (40%) showed that Adventists consumed less fat. One showed that Adventists consumed less fat when comparing total fat in grams, but similar amount of fat as non-Adventists when comparing the percentage of energy from fat. Another study showed that Adventist

Table 1: Characteristics of studies included in the systematic review of the associations between R/S and fruit and vegetable or fat intake. Only variables related to this systematic review are reported in this table.

(a) Denominational studies (Adventists versus others)

No.	First author (publication year)	Location	*N*	Population	Sampling method	Denominations	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
1	Alexander (1999) [72]	Denver, USA	94	Adults	Convenience	Adventists Catholics	√	√	FFQ	Adventists (i) more fruit/vegetable (ii) less fat (iii) less saturated fat (iv) less % energy from saturated fat Nonsignificant: (i) polyunsaturated fat (ii) % energy from polyunsaturated fat (iii) % energy from fat	Gender
2	Hunt (1988) [73]	LA, California, USA	290	Postmenopausal women	Convenience	Adventists Methodists	√		24 hr dietary recall	Adventists nonsignificantly more fruit and vegetable ($P = 0.08$)	None
3	Kent (2009) [74]	Melbourne, Australia	1054	Adults	Random	Adventists Non-Adventists	√		FFQ	Adventists more fruit and vegetable	Age
4	Kuczmarski (1994) [75]	North Carolina, USA	227	Adolescents	Convenience	Adventists Non-Adventists	√	√	FFQ	Adventists (i) males & females: more fruit (ii) females: more fats	None
5	Rouse (1983) [76]	Perth, Australia	293	Adults, 22–44 yrs	Convenience	Adventist (vegetarians & omnivores) Mormons (omnivores)		√	24 hr dietary recall	Mormon males more total fat & saturated fat intake than male Adventist vegetarians Polyunsaturated fat—Adventist vegetarians > Mormons > Adventist omnivores P : S ratio—low in SDA omnivores and Mormons	None
6	Sabaté (1990) [77]	USA	1765	School children, 1st–10th grades	Random	Denominational school—SDA or public	√		FFQ	Adventist school children more fruit/vegetable	No
7	Shultz (1983) [78]	Oregon, USA	23	Adults	Random	Adventists (vegetarians) Non-Adventists (nonvegetarians)		√	3-day dietary record FFQ	3-day dietary record: nonsignificant, though non-Adventists 18% more total fat FFQ (i) Non-Adventists more deep fried vegetable (ii) Non-Adventists more animal fat and more saturated fat	None

(a) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	Denominations	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
8	Fraser (1987) [79]	LA & Orange Counties, USA	320	Non-Hispanic Whites, 35–55 yrs	Random (Adventists) & convenience (non-Adventist neighbors)	Adventists Non-Adventists		√	FFQ	Adventists—less fat, less saturated fat, higher P : S ratio; linoleic acid none	None

(b) Denominational studies (other religions/denominations)

No.	First author (publication year)	Location	*N*	Population	Sampling method	Denominations	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
9	Epstein (1956) [80]	New York, USA	415	Garment workers, >40 yrs	Random	Italian Jewish Others		√	24-hr dietary recall	Italians and Jews—no difference in fat intake Jews more animal fats	None
10	Glick (1998) [81]	Yates Country, NY, USA	149	Old order Mennonites	Unclear	Mennonite USA population		√	FFQ	Mennonites males & females more fat & oleic acid than USA sample Mennonite males—similar % calories from fat with USA sample	None
11	Kita (1988) [82]	Kyoto, Japan	36	Adults, 24–35 yrs	Convenience	Zen monks University students		√	24-hr dietary recall	Zen monks less fat intake & higher P/S ratio	None
12	Lee (2009) [83]	Gyeongbuk, Republic of Korea	85	Females—Buddhist nuns & Catholic nuns	Convenience	Buddhists Catholics		√	Fat in % kcal Total fat Plant fat Animal fat	No differences in fat in % kcal, total fat, plant fat Catholics more animal fat	None
13	Mullen (2000) [84]	West of Scotland, UK	985	Adults, >35 yrs	Stratified random	Catholics Non-Catholics	√		FFQ	Catholics—pure fruit juice Catholic males—less fruit and vegetable	Sex, occupational class
14	Shatenstein (1993) [85]	Greater Montreal, Canada	250	Hassidic families	Random	Hassidic sects—Outremont Hassidim & Lubavitcher Hassidim	√		Food frequency & food habits list 2-day food record	Lubavitcher Hassidim more cooked fruit	None

(c) Denominational + degree of R/S studies

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
15	Kim (2004) [86]	USA	546	Adults	Random	Religious denomination Religious attendance Religious application Religious commitment Religious identity Religious coping Religious social support		√	National Cancer Institute's Quick Food Scan	Conservative Protestant/others/no religion women more fat than Catholic women Males—none	Age, race, education, marital status, employment

(c) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
16	Kim (2008) [87]	Texas, USA	424	Non-Hispanic Whites, 58–100 yrs	Random	Denomination Attendance Religious social support (% network in church & % network in religion)		√	Interview about fat reduction behavior	All R/S measures nonsignificant for men Women—Denomination nonsignificant; more % network in church, less fat reduction behavior; more % network in religion, more fat reduction behavior	Age, SES, urban-rural residence, living with someone, chronic illness, physically disabled, health & disability, general social support
17	McIntosh (1984) [88]	Virginia, USA	371	Elderly	Random	Religious participation Religious salience Religious disagreement Religious preference		√	24 hr dietary recall	+ve for salience and fat intake +ve for disagreement and fat intake More localistic, Methodists more fat, Brethren less fat	Sex, income
18	Schlundt (2008) [89]	Nashville, Tennessee, USA	3014	White & African Americans, >18 yrs	Stratified random	Religious denomination/affiliation Religious involvement Index (religious attendance, religiosity, perception of religion as a source of strength and comfort)	√	√	Eating Behavior Patterns Questionnaire Eating Styles Questionnaire (both Adapted from Behavioral Risk Factor Surveillance System)	Denomination—nonsignificant Religious involvement index positively associated with healthy eating behaviors and high-fat behaviors	Age, sex, race, education, income & employment

(d) Degree of R/S studies

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
19	Arredondo (2005) [90]	USA	211	Women, 18–65 yrs	Random	Church attendance	√	√	Block fat & fiber screener	Frequent churchgoers more fiber than nonchurchgoers Churchgoers (frequent & infrequent) more fiber than nonchurchgoers	Education, marital status, employment, age

(d) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
20	Baruth (2011) [91]	South Carolina, USA	1136	African Americans, >18 yrs	Random	Perceived environmental church support (perceived written informational, perceived spoken informational, perceived instrumental, total perceived church support)	√	√	National Cancer Institute Fruit and Vegetable screener Servings of fruit and vegetable Fat- and Fiber-Related Behavior Questionnaire	More fruit and vegetable (i) more total perceived church support, perceived written informational support & perceived spoken informational support More low-fat behavior (i) more total perceived church support and perceived written informational support	Sex, years of education, health rating, age, BMI, influence of church
21	Benjamins (2012) [92]	USA	351	Jewish students, 5th–8th grades	Convenience	Religious beliefs & health	√		Youth Risk Behavior Survey (5 fruit and vegetable daily)	Nonsignificant	Gender, weight status, dieting, parental involvement, confidence
22	Debnam (2012a) [93]	USA	2370	African Americans, >21 yrs	Probability-based but not representative	Religion social support (emotional support received, emotional support provided, anticipated support, negative interaction)	√		National Cancer Institute's Five-A-Day Survey	More social support, more fruit and vegetable (i) additive effect: emotional religious support	Age, education, sex, self-rated health status
23	Debnam (2012b) [94]	USA	2370	African Americans, >21 yrs	Random	Spiritual Health Locus of Control Scale (active spiritual, passive spiritual)	√		National Cancer Institute's 5-A-Day Survey	Overall: +ve for active spiritual and daily fruit servings −ve for passive spiritual and daily vegetable servings Males: −ve for passive spiritual and daily vegetable servings; nonsignificant for fruit Females: −ve for passive spiritual and daily vegetable servings; none for fruit	Age, education, health status

(d) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
24	Fife (2011) [95]	Northeast, USA	510	African American university students	Convenience	Duke University Religion Index	√		Youth Risk Behavior Survey (i) Ate no fruit during the past 7 days (ii) Ate no salad during the past 7 days (iii) Drank no 100% fruit juice during the past 7 days	Chi-square test: (i) nonsignificant—ate no fruit during the past 7 days; ate no salad during the past 7 days (ii) significant—drank no 100% fruit juice during the past 7 days Logistic regression: (i) univariate & multivariate—"intrinsic only" group more likely to drink no 100% fruit juice during the past 7 days	Year in school, gender
25	Franklin (2007) [96]	USA	1273	Adults, 18–96 yrs	Stratified random	Religious health fatalism questionnaire		√	Fat-increasing behavior Fat-decreasing behavior	High fatalism +ve associated with both high fat-increasing behavior & high fat-decreasing behavior	Age, race, gender, income, education
26	Friedlander (1985) [97]	Jerusalem, Israel	746	Jewish adults	Multistage random	Degree of religiosity (Orthodox, traditional, secular)	√	√	24-hr dietary recall	+ve for total fat, saturated fat, and P : S ratio in males Nonsignificant for fruit and vegetable intake	Age, region of origin, BMI, social class, seasonality
27	Hart (2004) [98]	USA	2375	Adults, >35 yrs	Random	Religious orientation (intrinsic versus extrinsic)	√	√	Fat- and Fiber-Related Behavior Questionnaire	Nonsignificant for fruit and vegetable More extrinsic, less fat	Age, sex, race, education, marital status, church size
28	Hart (2006) [99]	Seattle, USA	2375	Adults, >18 yrs	Random	Cohesiveness of religious organization members		√	Fat- and Fiber-Related Behavior Questionnaire	More cohesiveness, less fat, but nonsignificant after controlling for age and race	Age, race
29	Hart (2007) [100]	Washington, USA	1520	Adults, >18 yrs	Random	Social environmental (cohesion, leader support, order/organization, leader control)	√	√	Fat- and Fiber-Related Behavior Questionnaire	More cohesion, more order/organization, more fruit and vegetable More cohesion, order/organization, lower fat	Age, race, gender, education marital status, size of religious organization

(d) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
30	Holt (2005) [101]	Missouri, USA	1227	African American women, 18–65 yrs	Convenience	Religiosity (beliefs & behavior) (i) 4 categories: low religious behavior only, belief only, high religious	√		National Cancer Institute's 5-a-day survey	Fruit/vegetable intake in descending order: Higher religious, behavior only, belief only, low religious	Education, income examined as potential covariates but not included because they are not associated with religious orientation
31	Lytle (2003) [102]	Minnesota, USA	3878	Adolescents	Random	Spiritual beliefs in health behaviors	√		Fruit and vegetable food frequency scale (from Behavioral Risk Factor Surveillance System)	Higher spiritual belief, more fruit and vegetable	Demographic & psychosocial variables
32	Obisesan (2006) [103]	USA	14,094	Nonpregnant adults, >20 yrs	Multistage random	Church attendance		√	FFQ 24-hr dietary recall	Nonsignificant	Age, sociodemographic variables, health status
33	Park (2009) [104]	Hartford Hospital, USA	167	Cancer survivors, 18–55 yrs	Convenience	Religious service attendance Daily spiritual experiences Religious struggle Spiritual strain scale Mediator: Self-assurance	√		5 servings of fruit and vegetable a day	Daily spiritual experiences positively related to daily 5 servings of fruit and vegetable Self-assurance not related to 5 servings of fruit and vegetable, so no mediation test conducted	No
34	Pitel (2012) [105]	Slovakia	3674	Adolescents	Stratified random	Religiosity (religious attendance & self-rated importance of religious faith)	√		No regular fruit and vegetable consumption	Nonsignificant	Age, parental divorce, parental education, family affluence, degree of urbanization, ethnicity

(d) Continued.

No.	First author (publication year)	Location	*N*	Population	Sampling method	R/S measures	Dietary measures F/V	Dietary measures Fat	Dietary assessment methods	Finding	Control variables
35	Reeves (2012) [106]	Jackson, USA	2378	African Americans	Random	Organized religious activity Private prayer Daily spiritual experiences		√	FFQ—% calories from fat	Nonsignificant	None
36	Salmoirago-Blotcher (2011) [107]	USA	71,689	Postmenopausal women, 50–79 yrs	Random	Service attendance		√	FFQ—saturated fat intake	Nonsignificant	Age, race, marital status, education, health insurance, enrollment status, physical functioning, self-rated health
37	Shmueli (2007) [108]	Israel	3056	Jews, >18 yrs	Random	Religiosity—secular, observant, religious	√		FFQ	Nonsignificant	Age, gender, education, marital status, ethnic origin, socioeconomic status
38	Underwood (2006) [109]	Midwest, USA	471	African Americans, >20 yrs	Convenience	Religious intensity/religiousness Spiritual intensity/spirituality Religious practices	√	√	Public health Service health Style self-test	Very/moderately spiritual, very/moderately religious, more collaboration—less fruit and vegetable, more fat	None
39	Wiist (2012) [110]	Web-based	811	Buddhists, >18 yrs	Convenience	Buddhist Devoutness Index (Buddhist practices & beliefs)	√	√	FFQ	Nonsignificant	Age, gender, income, disability, social support

Abbreviations:
F/V: fruit/vegetable.
FFQ: food frequency questionnaire.
P : S: polyunsaturated fat : saturated fat.

females consumed more fat. One showed no significant relationship. These five studies also examined the intake of saturated fat, and all found that Adventists consumed less saturated fat, even though their total fat intake was similar to those of non-Adventists. Three of the studies also compared the intake of unsaturated fat. Two found no significant relationship, and one found that among Adventists, the vegetarians consumed more unsaturated fat than Mormons, but Adventist omnivores consumed less saturated fat than the Mormons. Among the studies that compared unsaturated fat intake, two also looked at the polyunsaturated fat and saturated fat (P : S) ratio and found that Adventists had a higher P : S ratio.

Two of the denominational studies examined Jews. One compared the Jews with the general population in Italy and found that there was no difference in fat intake between the two groups. However, Jews consumed more animal fat than the general population. Another study compared two Jewish Hassidic sects and found that Lubavitcher Hassidim consumed more cooked fruit.

There are two denominational studies that examined fat intake in Buddhists. The study that compared Japanese Zen Buddhist monks with the general population in Japan found that Zen Monks consumed less total fat and saturated fat, more unsaturated fat, and had a higher P : S ratio. However, another study that compared Buddhist nuns with Catholic nuns found no significant difference in total fat and unsaturated fat intake, but Catholic nuns consumed more animal fat.

One study compared Mennonites with the general US population and found that the Mennonites have higher total fat, saturated fat, and unsaturated fat intake. Another one study compared Catholics with non-Catholics in Scotland and found that Catholics consumed less pure fruit juice and Catholic males consumed less fruit and vegetable.

Four studies were multidenominational. One examined fruit, vegetable, and fat intake and found no significant relationship. Three studies examined fat intake only. One found no significant association. One study found that religious denomination mediates fat intake. One showed that among females, conservative protestant and those who have no religious preferences consumed more fat than Catholics.

4.3. Degree of Religiosity Studies. A total of 25 studies were analyzed. The R/S measures were categorized into the six categories described in the previous section.

Table 4 shows the categories of R/S measures and their association with fruit and vegetable intake. The most commonly used R/S measures are multidimensional (36.8%). Among the 19 R/S measures, eight (42.1%) showed a positive association with fruit and vegetable intake and another seven (36.8%) showed no significant relationship. Among the seven measures that showed no significant relationship, four of them showed evidence of a positive trend in the relationship between fruit and/or vegetable intake.

Table 5 shows the categories of R/S measures and their association with total fat intake. The most commonly used R/S measures are institutional (40.7%). Among the 27 R/S measures, 15 (55.6%) showed no significant relationship between R/S and total fat intake, while seven (25.9%) showed a negative relationship. Among studies that show no significant relationship, five showed evidence of a positive trend, and seven showed evidence of a negative trend.

In addition to total fat intake, three studies also examined saturated fat intake. Two studies showed no significant association. One examined the degree of orthodoxy among Jews and found that more Orthodox Jews consumed less total fat and saturated fat, more unsaturated fat, and have a higher P : S ratio.

Only 20% (5 out of 25) of the papers reported the validity of R/S measures, and 52% (13 out of 25) reported reliability of at least one of the R/S measures. Of the 12 studies that do not report reliability, three of them utilized a single-item measure of attendance. The majority of the studies (88%) controlled for covariates such as age, gender and years of education. All the studies were cross-sectional. Only one study investigated the mediator between R/S measures and healthy behaviors. However, since the mediator (self-assurance) was not associated with the intake of fruit and vegetable in the study, no further mediation test was carried out.

Table 6 shows the number of studies categorized based on their reported relationship. Of the 17 studies that examined the degree of R/S and fruit and vegetable intake, R/S reported positive association with fruit and vegetable intake in about half (52.9%) of the studies and no association in 35.3% of the studies. As for fat intake, almost half (46.7%) of the studies reported no association, and an equal number (20%) reported positive and negative findings.

5. Discussion

About half of the denominational studies compared Adventists and non-Adventists. Healthy eating is one of the major teachings in the Adventist Church; other Christian denominations (except the Church of Jesus Christ of the Latter-day Saints) do not emphasize healthy eating as much as the Adventist Church. Thus, it is not surprising to find that Adventists generally consumed more fruit and vegetable and less total fat and saturated fat than non-Adventists. Similarly in studies that compared Buddhist monks and nuns with non-Buddhists, because of the teaching of Ahimsa (do no harm), Buddhists monks and nuns are vegans, and again it is not surprising to find that they consumed less saturated fat or animal fat. A weakness of denominational studies is the assumption of homogeneity of dietary practices among the members within a denomination. Denominational studies only compared denominational differences as a whole and omitted the individual variation of R/S of members within a denomination. It is unknown whether this variation is associated with dietary intake. In addition, denominational studies are "likely to be confounded with region and the effects of socioeconomic status" [69], and almost all of the denominational studies in this review did not control for covariates.

Four of the denominational studies included samples from various Christian denominations. Three of the studies found no significant relationship between religious denomination and dietary intake. The nonsignificant findings were

Table 2

Categories of R/S measures	Paper no. in Table 1
Institutional	
Attendance	15, 16, 19, 32, 33, 36
Organized religious activity	35
Perceived environmental church support	20
Religious social support	15, 16, 22
Cohesiveness of religious organization members	28
Social environment	29
Religious identity	15
Ideological	
Religious beliefs and health	21
Religious application	15
Religious coping	15
Spiritual belief in health behaviors	31
Religious salience	17
Religious disagreement	17
Religious problem-solving	38
Religious struggle	33
Spiritual health locus of control	23
Religious health fatalism	25
Private devotion	
Private prayer	35
Religious orientation (intrinsic versus extrinsic)	27
Spiritual	
Daily spiritual experience	33, 35
Multidimensional	
DUREL	24
Religiosity (beliefs and practices)	30
Religious participation	17
Religiosity (attendance and self-rated importance)	34
Religious involvement index	18
Jewish religiosity	26, 37
Religious commitment	15
Buddhist devoutness index	39
Generic	
Religious intensity	38
Spiritual intensity	38

probably due to the fact that respondents from various denominations interpreted questionnaire items related to R/S differently.

Although a meta-analysis was not conducted due to heterogeneity of R/S measures and dietary measures, the present review on the relationship between degree of R/S and fruit and vegetable intake points towards a positive association; that is, a higher score of R/S is associated with higher fruit and vegetable intake. About half of the Christian studies showed a significant positive relationship with fruit and vegetable. This is consistent with the previous review that R/S is associated with a better diet [28]. The results of the present review also suggest that the regular consumption of fruit and vegetable may be one of the possible links between R/S and positive health outcomes. Other possible links include adoption of other health behaviors such as the no smoking and drinking; better social integration and social support from religious communities; higher self-esteem and personal efficacy among the more religious; better coping resources and behaviors; positive emotions from religious practice; and healthy beliefs [42].

Six of the 17 studies reported no association between degree of R/S and fruit and vegetable intake. All three studies that included only Jewish samples showed no association. This may arise because the dietary restrictions of Judaism only revolve around meat and animal products and not on fruit and vegetable. The consumption of fruit and vegetable is neither restricted nor encouraged.

The findings for fat intake contradicted the previous review. Almost half of the studies reported no association, and an equal number reported positive and negative findings. The contradiction might be due to the fact that the previous review examined diet as a whole and not particularly fat intake. There are other studies which showed that R/S was positively associated with greater body weight [70] and obesity [71], both of which might be related to high fat intake. The proposed explanation of higher prevalence of obesity among religious people could be that religious community is more accepting towards obese people, rather than R/S itself being the cause of obesity [71]. Kim et al. [70] found that the positive relationship between R/S and greater body weight disappeared after controlling for health behaviors, particularly smoking. None of the degree of R/S studies in this review controlled for health behaviors and it is unknown whether similar attenuation effect was also found between R/S and fat intake.

Most of the studies in this systematic review included samples that were from the USA and Western countries where Christianity is the predominant religion; only two studies were conducted in Asia and one in Africa, even though religion is considered important by most people on these two continents [14]. None of the studies examined Hinduism and Islam, the two major religions in the world besides Christianity. Only three studies examined Buddhists; however, they were Buddhists in the USA rather than in Asia, even though there is a higher percentage of Buddhists in Asia.

The most frequently used dietary assessment methods were brief dietary assessments. However, they are crude estimates of dietary intake. For example, the Fat- and Fiber-Related Behavior Questionnaire does not report dietary intake per se but only an overall score of fruit and vegetable and fat intake. Dietary records are considered the "gold standard" of dietary assessment methods [68]. However, only two studies in this review utilized dietary records. No studies used dietary history, probably because they are cross-sectional and assessing dietary history is time-consuming.

The present review also showed a diversity of R/S measures used. Even within a category (see Table 2), there was variation. For example, the R/S measures coded as "institutional," defined as "measures that focused on the social and behavioral aspects of R/S" [65], included attendance and

Table 3: Dietary assessments of fruit and vegetable and fat intake.

Dietary assessment methods	Fruit and vegetable		Fat	
	Total	%	Total	%
Dietary records	0	0	2	7.4
24-hour dietary recall	2	6.9	6	22.2
Food frequency	8	27.6	9	33.3
Brief dietary assessments	19	65.5	10	37.0
Dietary history	0	0	0	0
Total	29	100.0	27	100.0

Table 4: Categories of R/S measures and fruit and vegetable intake.

Categories	Relationships				Total	%
	+	−	Mixed	None		
Institutional	4	0	0	1	5	26.3
Ideological	1	1	1	1	4	21.1
Personal devotion	0	0	0	0	0	0.0
Existential	1	0	0	0	1	5.3
Multidimensional	2	0	1	4	7	36.8
Generic	0	0	1	1	2	10.5
Total	8	1	3	7	19	100

Mixed: when an R/S measure is positively associated with fruit intake and negatively associated with vegetable intake or vice versa, or when a R/S measure is positively/negatively associated with fruit intake and not associated with vegetable intake or vice versa.

Table 5: Categories of R/S measures and total fat intake.

Categories	Relationships				Total	%
	+	−	Mixed	None		
Institutional	2	0	1	8	11	40.7
Ideological	0	3	1	2	6	22.2
Personal devotion	1	0	0	1	2	7.4
Existential	0	0	0	1	1	3.7
Multidimensional	0	2	0	3	5	18.5
Generic	0	2	0	0	2	7.4
Total	3	7	2	15	27	100

Positive (+) relationship: a higher score of R/S measure is associated with *lower* fat intake; negative relationship (−): a higher score of R/S measure is associated with *higher* fat intake.
Mixed: when an R/S measure is both positively and negatively associated to fat intake.

Table 6: Categories of studies.

Dietary intake	Relationships				Total
	+	−	Mixed	0	
Fruit and vegetable	9	1	1	6	17
Fat	3*	3*	2	7	15

Notes: * positive (+): a higher score of R/S measure is associated with *lower* fat intake; negative (−): a higher score of R/S measure is associated with *higher* fat intake.

religious social support, which are two different concepts that warrant further categorization.

Because of the diversity of R/S measures and that different R/S measures show different effects in different populations, it was proposed that R/S should be treated as a multidimensional construct [69]. However, less than a third of the R/S measures included in the present review are multidimensional.

Very little information was provided with regard to the psychometric properties of the R/S measures. In this review, only 20% of the papers reported validity and 52% reported reliability of at least one R/S measure. However, only three studies (out of 25) used single-item measures of religious attendance. The overall quality of the degree of R/S studies was mixed, most of the studies control for covariates, but none of them used longitudinal data and only one attempted mediation analysis. All the studies were cross-sectional; thus the inference of causal relationship between R/S and fruit, vegetable, and fat intake could not be established. In R/S and health research, there are very few experimental studies, and the wide use of cross-sectional data is another major drawback, in addition to lack of clear definition of R/S [39].

There are several limitations in this review. Only peer-reviewed studies that are published in English were included. This could be the reason why most studies in this review were from Western countries and included mostly Christian samples. Second, unpublished studies were excluded and this might lead to publication bias, since studies with significant results are more likely to be published. Nonetheless, the present review was the first that examined the relationship of R/S with specific dietary intake.

The contradictory findings among the studies of degree of R/S point to the need for more studies that control for health behaviors, for example, smoking, and use more rigorous dietary assessment method. In addition, more studies are needed that include participants of other religions, especially those of Eastern traditions and from non-Western countries. There is also a need to use more rigorous R/S measures that are validated, reliable, and multidimensional.

6. Conclusion

Overall, the denominational studies showed that religious denomination is significantly related to fruit, vegetable, and fat intake. Specifically, the Adventists consumed more fruit and vegetable and less fat than non-Adventists. However, the relationship between the degree of R/S and dietary intake is mixed. The results of this review suggest that future research on R/S and diet may help explain the possible mechanism between religion and health. Methodology more sophisticated than observational studies is required. Longitudinal study methodologies (while still often observational) may enhance our understanding of underlying mechanisms. As religion is important for many people and affects their diet, improved methodological quality of R/S and diet research will surely shed more light on this area.

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Research Article

Faith as a Resource in Patients with Multiple Sclerosis Is Associated with a Positive Interpretation of Illness and Experience of Gratitude/Awe

Arndt Büssing,[1,2] Anne-Gritli Wirth,[1] Knut Humbroich,[3] Kathrin Gerbershagen,[4] Sebastian Schimrigk,[5] Michael Haupts,[6] Klaus Baumann,[2,7] and Peter Heusser[8]

[1] *Quality of Life, Spirituality and Coping, Institute of Integrative Medicine, Witten/Herdecke University, 58313 Herdecke, Germany*
[2] *Freiburg Institute for Advanced Studies (FRIAS), Universität Freiburg, 79098 Freiburg, Germany*
[3] *Department of Neurology, Communal Hospital Herdecke, 58313 Herdecke, Germany*
[4] *Department of Neurology and Palliative Care, Köln-Merheim Hospital, 51109 Cologne, Germany*
[5] *Neurological Hospital, Clinic of Lüdenscheid, 58515 Lüdenscheid, Germany*
[6] *Augusta Hospital Anholt, Neurological Hospital, 46419 Isselburg, Germany*
[7] *Caritas Science and Christian Social Work, Faculty of Theology, Albert-Ludwigs University, 79104 Freiburg, Germany*
[8] *Institute of Integrative Medicine, Witten/Herdecke University, 58313 Herdecke, Germany*

Correspondence should be addressed to Arndt Büssing; arndt.buessing@uni-wh.de

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The aim of this cross-sectional anonymous survey with standardized questionnaires was to investigate which resources to cope were used by patients with multiple sclerosis (MS). We focussed on patients' conviction that their faith might be a strong hold in difficult times and on their engagement in different forms of spirituality. Consecutively 213 German patients (75% women; mean age 43 ± 11 years) were enrolled. Fifty-five percent regarded themselves as neither religious nor spiritual (R−S−), while 31% describe themselves as religious. For 29%, faith was a strong hold in difficult times. This resource was neither related to patients' EDSS scores, and life affections, fatigue, negative mood states, life satisfaction nor to Positive attitudes. Instead it was moderately associated with a Reappraisal strategy (i.e., and positive interpretation of illness) and experience of gratitude/awe. Compared to spiritual/religious patients, R−S− individuals had significantly ($P < .0001$) lower Reappraisal scores and lower engagement in specific forms of spiritual practices. The ability to reflect on what is essential in life, to appreciate and value life, and also the conviction that illness may have meaning and could be regarded as a chance for development was low in R−S− individuals which either may have no specific interest or are less willing to reflect these issues.

1. Introduction

There are several studies pointing to the fact that patients with chronic diseases may use their spirituality/religiosity (SpR) as a beneficial resource to cope [1–10], particularly patients with fatal diseases [11, 12]. However, less is known about relatively young patients with a chronic disease such as multiple sclerosis (MS) in this respect. Due to its often unpredictable course of exacerbations and remissions with significant impairment of both quality of life and life goals and due to the fact that there is no "cure" and only symptomatic and immunomodulatory therapy [13], patients often experience social isolation, are depressed, and thus have a higher risk of suicide [14–16].

A qualitative study among 7 patients with MS found that, during the course of disease, patients observed "positive changes in terms of their values and outlook" [17]. Interestingly, the patients reported that the disease associated

with functional difficulties and psychological challenges was "ameliorated to some extent by an increased appreciation for life and spirituality" [17]. Also a further qualitative study enrolling 13 patients with MS found that adaptation to the disease was influenced by a variety of factors, including religion/spirituality [18].

First findings from cross-sectional studies indicate that spiritual/religious attitudes among patients with MS are significantly lower when compared to patients with cancer [3, 5], also their engagement in different forms of spiritual practices was significantly lower than in cancer patients [4]. Chen et al. [19] measured "overall belief and spirituality" in MS patients from the US and found that the spirituality scores were not related to age of diagnosis; moreover, most of the patients suggested a positive connection between spirituality and disability rather than a negative connection [19]. Makros and McCabe [20] found no significant association between spirituality/religiosity and psychological adjustment or quality of life among patients with MS; however, intrinsic religious orientation and quest religious orientation were associated with low psychological adjustment. To explain these surprising findings, Makros and McCabe [20] suggested that either patients utilized their religiosity (i.e., praying) to cope with their health affections and impaired quality of life, or they were more depressed because their religious activities did not result in the desired positive resolutions. Presumably, time plays a crucial role because even those patients with low interest in spirituality/religiosity might reactively "use" a spiritual source in acute situations (and quit when their expectations are not fulfilled), while during the long-lasting chronic course of illness there may occur religious developments and particularly those with a vital spirituality may continue to practice their religiosity whether this may have a beneficial effect on their health or not.

Although the measures and patient samples are not comparable, it was obvious that in US patients with MS [19] the "overall belief and spirituality" score was relatively high (mean 4.1 ± 1.0, with a minimum of 1 and a maximum of 5), while German patients scored relatively low both on the (religious) Trust scale (mean 56.8 ± 28.0 in MS compared to the 70.0 ± 26.5 of the whole sample of chronic patients; maximum score 100) and also on the (spiritual) Search scale (mean 35.8 ± 2.5 compared to the 50.6 ± 25.9 of the whole sample; maximum scores 100) [3]. Thus, the relevance of spirituality to cope with MS may differ with respect to cultural and specific religious issues. In fact, Germany is a more secular society with about 42% of patients with chronic pain diseases who would regard themselves as neither religious nor spiritual [6], and this may have an impact on their strategies to cope with illness.

The aim of the study was thus to investigate (1) MS patients' conviction that their faith might be a "strong hold in difficult times", and (2) the impact of patients' spiritual/religious attitudes on their life satisfaction, mood states, affections of daily life, internal adaptive coping strategies, and engagement in spiritual practices. We suggested that having faith is not related to the course of disease or life satisfaction but with the ways patients may view their life and how they cope with illness.

2. Materials and Methods

2.1. Patients. We focussed on patients with multiple sclerosis (MS) because they are relatively young, and they have to deal with an illness which is characterized by an often unpredictable course of exacerbations and remissions with significant impairment of life goals and by the fact that there is no "cure."

All individuals of this prospective, anonymous, multicentre, cross-sectional study were informed about the purpose of the study, were assured of confidentiality and their right to withdraw at any time, and asked to provide informed consent. Ethical approval was obtained by the IRB of Witten/Herdecke University (number 21/2012).

Outpatients with MS were consecutively recruited from four specialized hospitals, that is, Department of Neurology and Palliative Care, Köln-Merheim Hospital, Cologne; Department of Neurology, Communal Hospital Herdecke; Neurological Hospital Anholt, Clinic of Lüdenscheid; and Augustahospital Anholt, Isselburg.

Inclusion criteria were verified diagnosis of multiple sclerosis, age between 18 and 65 years, and written consent to participate; exclusion criteria were manifest psychic diseases/affections (ICD10-classifications F0–F5).

2.2. Measures

2.2.1. Adaptive Internal Coping Strategies. Adaptive coping strategies in response to MS were measured with the AKU questionnaire (AKU is an acronym of the German translation of "Adaptive Coping with Disease"), which was designed to identify adaptive coping styles, such as to create favorable conditions, search for information, medical support, religious support, social support, initiative spirit, and positive interpretation of disease [5, 21]. For this analysis we focused on internal resources rather than external resources, and used the following subscales.

(i) *Reappraisal: positive interpretation of illness* (Cronbach's alpha = .83) addresses a reappraisal attitude referring to cognitive processes of life reflection (i.e., reflect on what is essential in life; illness has meaning; illness as a chance for development; appreciation of life because of illness).

(ii) *Conscious way of living* (alpha = .73) addresses cognitive and behavioral strategies in terms of internal powers and virtues (i.e., healthy diet; physical fitness; living consciously; keep away harmful influences; change life to get well).

(iii) *Positive attitudes* (alpha = .68) refers to internal cognitive and behavioral strategies (i.e., realization of shelved dreams and wishes; resolving cumbering situations of the past; take life in own hands; doing all that what pleases; positive thinking; avoiding thinking of illness).

We added two single items addressing the attitudes towards their belief, that is, X1 "My faith is a strong hold in

difficult times" and X2 "Because of my experiences I have lost my faith".

All items were scored on a 5-point scale from disagreement to agreement (0: does not apply at all; 1: does not truly apply; 2: do not know (neither yes nor no); 3: applies quite a bit; 4: applies very much). The sum scores were referred to a 100% level (transformed scale score). Scores > 50% indicate high agreement or utilization of coping strategy, while scores < 50% indicate low usage of respective strategy.

2.2.2. Engagement in Spiritual Activities. To differentiate various forms of specific spiritual practices, we used the SpREUK-P questionnaire [4, 22]. The generic instrument was designed to measure the engagement in organized and private religious, spiritual, existential, and philosophical practices. In its shortened 17-item version it differentiates 5 factors [22]:

(i) religious practices (alpha = .82; i.e., praying, church attendance, and religious events, religious symbols);

(ii) humanistic practices (alpha = .79; i.e., help others, consider their needs, do good, connectedness, etc.);

(iii) existential istic practices (alpha = .77; i.e., meaning in life, self-realization, and get insight);

(iv) gratitude/awe (alpha = .77; i.e., feeling of great gratitude, feelings of wondering awe, and experienced and valued beauty);

(v) spiritual (mind body) practices (alpha = .72; i.e., meditation, rituals, and working on a mind-body discipline (i.e., yoga, qigong, mindfulness, etc.)).

The items of the SpREUK-P are scored on a 4-point scale (0: never; 1: seldom; 2: often; 3: regularly). The scores can be referred to a 100% level (transformed scale score), which reflect the degree of an engagement in the distinct forms of a spiritual/religious practice ("engagement scores"). Scores > 50% indicate higher engagement, while scores < 50 indicate rare engagement.

2.2.3. Spiritual/Religious Self Categorization. According to their responses to the SpREUK items f2.6 ("To my mind I am a religious individual" = R) and f1.1 ("To my mind I am a spiritual individual" = S), the practitioners were categorized as religious but not spiritual (R+S−), as not religious but spiritual (R−S+), as both religious and spiritual (R+S+), or as neither religious nor spiritual (R−S−) [3]. The respective items were scored on a 5-point scale from disagreement to agreement (0: does not apply at all; 1: does not truly apply; 2: do not know (neither yes nor no); 3: applies quite a bit; 4: applies very much). To avoid internal conflicts, we did not provide information how a religious or a spiritual individual should be defined.

2.2.4. Life Satisfaction. Life satisfaction was measured using the *Brief Multidimensional Life Satisfaction Scale* (BMLSS) [24] which uses items of Huebner's "Brief Multidimensional Students' Life Satisfaction Scale" [25, 26] and was tested among adults [24]. The eight items of the BMLSS address intrinsic (*Myself*, *Life in general*), social (*Friendships*, *Family life*), external (*School situation*, *Where I live*), and prospective dimensions (*Financial situation*, *Future prospects*). The internal consistency of the instrument was good (alpha = .87) [24]. For this analysis we used the 10-item version of the BMLSS which includes satisfaction with the health situation and satisfaction with the own abilities to manage daily life concerns. Moreover, we used three further items addressing satisfaction with the support by family, partner, or friends as an additional scale ("satisfaction with social support").

Each item was introduced by the phrase "I would describe my level of satisfaction as . . .," and scored on a 7-point scale from dissatisfaction to satisfaction (0: terrible; 1: unhappy; 2: mostly dissatisfied; 3: mixed (about equally satisfied and dissatisfied); 4: mostly satisfied; 5: pleased; 6: delighted). The BMLSS sum score refers to a 100% level ("delighted").

2.2.5. Mood States. To assess mood states we relied on the 19-item ASTS ("Aktuelle Stimmungslage Skala") scale of Dalbert [27] which refers to the profile of mood states (POMS) [28]. It measures the state component of subjective well-being and differentiates five mood states, that is, positive mood (6 items), sorrow (3 items), despair (3 items), tiredness (4 items), and anger (3 items). The internal consistency of the factors ranges from alpha = .83 to .94. The scale has a 7-point rating scale ranging from 0 (not at all) to 7 (very strong).

2.2.6. Multiple Sclerosis Associated Fatigue. To measure fatigue associated with MS, we used the "Fatigue Scale for Motor and Cognitive Functions" (FSMC) by Penner et al. [29]. This 20-item instrument has a very good internal consistency (alpha > .91). Ten items refer to the cognitive scale, and 10 items to the motoric scale which all were scored on a 5-point Likert scale ranging from 1 (does not at all) to 5 applies very much. FSMC sum scores ≥43 indicate mild fatigue, ≥53 moderate fatigue, and ≥63 strong fatigue.

2.2.7. EDSS Score. To classify the condition of the patients, we used the "Expanded Disability Status Scale" (EDSS). The EDSS is a method of quantifying disability in multiple sclerosis and monitoring changes in the level of disability over time [30]. The EDSS scale ranges from 0 to 10 in 0.5 unit increments that represent higher levels of disability. Scoring is based on an examination by a neurologist.

EDSS steps from 1.0 to 3.5 refer to people with MS who are able to walk unrestricted and are based on measures of impairment in eight functional systems, that is,

(i) pyramidal: weakness or difficulty moving limbs

(ii) cerebellar: ataxia, loss of coordination, or tremor

(iii) brainstem: problems with speech, swallowing, and nystagmus

(iv) sensory: numbness or loss of sensations

(v) bowel and bladder function

(vi) visual function

(vii) cerebral (or mental) functions

(viii) other.

Each functional system is scored on a scale from 0 (no disability) to 5 or 6 (more severe disability).

EDSS steps from 4.0 to 9.5 are defined by the impairment to walking.

2.2.8. Self-Perceived Health Affections. Patients' self-perceived impairment of daily life though the health situation/disease ("health affections") was measured with a visual analogue scale ranging from 0 (none) to 100 (unbearable).

2.3. Statistical Analyses. Descriptive statistics as well as analyses of variance, first-order correlations, and regression analyses were computed with SPSS 20.0. We judged a $P < .05$ as significant; for correlation analyses we chose a significance level $P < .001$. With respect to classifying the strength of the observed correlations, we regarded $r > .5$ as a strong correlation, an r between .3 and .5 as a moderate correlation, an r between .2 and .3 as a weak correlation, and $r < .2$ as no or a negligible correlation.

3. Results

3.1. Characteristics of Enrolled Patients. Two hundred thirteen patients were enrolled in this study. 75% were women, and 22% were men (4% did not provide these data). Their mean age was 43 ± 11 years. Most were living with a partner (73%) and 27% were living alone (either single or divorced). 51% had relapsing remitting MS course, 25% progressive relapsing MS, and 23% chronic progressive MS. Their mean EDSS score was 3.7 ± 1.8, ranging from 0 to 7.5 (26% did not provide the respective data). All further socio demographic data are presented in Table 1.

Table 1: Characteristics of 213 patients with MS.

Variables*	Mean/%
Gender, %	
Women	78
Men	22
Age, years (mean, SD)	42.6 ± 11.4
Family status, %	
Married	56
Living with partner	17
Divorced	8
Single	19
Educational level, %	
Secondary (Hauptschule)	22
Junior high school (Realschule)	33
High school (Gymnasium)	36
Other	9
Religious orientation, %	
Christian	74
Other	8
None	18
Spiritual/religious self-perception, %	
Neither religious nor spiritual (R−S−)	54
Not religious but spiritual (R−S+)	16
Religious but not spiritual (R+S−)	19
Both religious and spiritual (R+S+)	20
Employment status, %	
At pension	32
Unable to work	7
Unemployed	3
House work	8
Self-employed	4
Employed (business)	46
Course of MS, %	
Relapsing remitting	51
Progressive relapsing	25
Chronic progressive	23
EDSS score (mean, SD; range)	3.7 ± 1.8 (0–7.5)
0.0–1.5 (%)	10
2.0–3.5 (%)	29
4.0–6.5 (%)	33
7.0–10 (%)	2
No information (%)	26
Self-perceived health affection (mean ± SD, range)	42.3 ± 21.5 (0–90)

*Data refer to the responding patients (i.e., 8 individuals did not state their gender, or 20 individuals did not provide information on their course of MS).

3.2. Attitudes towards Belief Ad Faith. The majority of patients had a Christian denomination (74%), 4% were Muslims, 3% had other denominations, and 18% none. With respect to their spiritual/religious self-categorization, 70% would not regard themselves as religious (Table 1); that is, 54% were neither religious nor spiritual (R−S−), 16% not religious but spiritual (R−S+), while 19% were religious but not spiritual (R+S−) and 12% both religious and spiritual (R+S+).

The statement "My faith is a strong hold in difficult times" was true for 29%, 52% rejected it, and 19% were undecided. Only 6% stated that they had lost their faith because of distinct experiences in life, 77% disagreed, and 17% were undecided.

As shown in Table 2, the perception of "faith as a strong hold in difficult times" was not related to patients' health status, life satisfaction, negative mood states, or *positive attitudes*, while it correlated weakly with positive mood and *conscious way of living*; instead it was moderately associated with *reappraisal: positive interpretation of illness* and with patients' engagement in spiritual practices, particularly with *religious practices* and *gratitude/awe*. Having lost faith due to specific experiences in life was only weakly associated with reduced positive mood and low religious practices. In line with the aforementioned statement on faith as a resource, also patients' engagement in *religious practices* did not significantly correlate with health, mood, or life satisfaction, but moderately with *reappraisal: positive interpretation of illness* and *gratitude/awe* (Table 2).

With respect to the mean scores, those patients with faith as a strong hold have high scores on *reappraisal: positive interpretation of illness*, while those lacking this faith have *Reappraisal* scores which indicate a lack of a positive interpretation of illness (Table 3). In contrast, whether patients have

Table 2: Correlation analyses.

	Faith is a strong hold in difficult times	Religious practices (SpREUK-P)
Faith is a strong hold in difficult times		**.705****
Have lost my faith		−.216 **
Health status		
EDSS score	.084	−.052
Perceived daily life affections (VAS)	.020	.067
Cognitive fatigue (FSMC)	.013	.101
Motoric fatigue (FSMC)	.071	.118
Fatigue sum score (FSMC)	.042	.115
Mood status (ASTS)		
Sorrow	−.049	.144
Despair	−.071	.069
Tiredness	.080	.153
Positive mood	.185**	.092
Life satisfaction (BMLSS-10)		
Life satisfaction sum score	.121	−.016
Satisfaction with social support	.028	.016
Adaptive (internal) coping strategies (AKU)		
Conscious way of Living	.192**	.148
Positive attitudes	.087	.029
Reappraisal: positive interpretation of illness	**.408****	**.306****
Engagement in spiritual practices (SpREUK-P)		
Existential practices	.202 **	.256 **
Humanistic practices	.183 **	.237 **
Religious practices	**.705****	
Spiritual mind-body practices	.272 **	.282 **
Gratitude/awe	**.477****	**.498****

** $P < .01$ (Pearson). Moderate and strong correlations are highlighted (bold).

Table 3: Having faith and associations with health status, life satisfaction, and adaptive coping strategies.

Faith is a strong hold in difficult times	Conscious way of living (AKU)	Positive attitudes (AKU)	Reappraisal: positive interpretation of illness (AKU)	Life satisfaction (BMLSS-10)	Positive mood (ASTS)	EDSS scores
No	69.8 ± 18.6	70.5 ± 16.8	38.2 ± 23.2	68.6 ± 18.3	23.3 ± 7.7	3.5 ± 1.7
Undecided	72.3 ± 13.4	68.0 ± 17.0	50.1 ± 23.9	66.5 ± 15.0	24.3 ± 7.0	4.2 ± 1.8
Yes	77.3 ± 17.4	74.7 ± 14.4	60.9 ± 26.5	72.8 ± 16.1	26.5 ± 6.9	3.8 ± 1.8
All patients	72.4 ± 17.4	71.0 ± 16.4	47.1 ± 26.0	69.3 ± 17.1	24.4 ± 7.4	3.8 ± 1.8
F value	**3.5**	2.3	**16.5**	1.9	**3.3**	1.6
P value	**.031**	n.s.	**<.0001**	n.s.	**.040**	n.s.

Results are means ± standard deviation. No: does not apply at all/does not truly apply; undecided: do not know (neither yes nor no); yes: applies quite a bit/applies very much.

this faith or not, they all have high scores for *conscious way of living*, *positive attitudes,* and life satisfaction. Engagement in spiritual/religious, existential, and humanistic practices was significantly higher in individuals with faith as a resource in difficult times and also with respect to *gratitude/awe* which is not an exclusive religious topic (Table 4).

Having this faith as a resource was not significantly influenced by gender, family status, educational level, or course of disease (data not shown). Instead, faith was a strong hold particularly for 67% of R+S+ and 60% of R+S− individuals, while of low relevance for R−S− (12%) and of minor relevance for R−S+ (6%) patients.

3.3. Attitudes and Convictions of Nonreligious and Nonspiritual (R−S−) Patients. Patients with this R−S− attitude did not differ from their religious/spiritual counterparts with respect to their EDSS score, daily life affections, fatigue, life

Table 4: Having faith and engagement in spiritual practices/activities.

Faith is a strong hold in difficult times	Existential practices (SpREUK-P)	Humanistic practices (SpREUK-P)	Religious practices (SpREUK-P)	Spiritual mind-body practices (SpREUK-P)	Gratitude/awe (SpREUK-P)
No	40.0 ± 26.2	62.5 ± 20.3	7.2 ± 10.1	14.0 ± 19.1	35.5 ± 19.3
Undecided	47.8 ± 21.1	63.0 ± 18.5	30.2 ± 15.5	27.5 ± 26.2	44.8 ± 15.4
Yes	53.1 ± 29.0	71.1 ± 14.3	45.1 ± 27.7	28.3 ± 28.0	60.0 ± 22.8
All patients	45.4 ± 26.5	64.9 ± 18.8	22.6 ± 24.0	20.9 ± 24.3	44.0 ± 21.9
F value	**4.9**	**4.3**	**87.5**	**8.9**	**27.3**
P value	**.009**	**.015**	**<.0001**	**<.0001**	**<.0001**

Results are means ± standard deviation. No: does not apply at all/does not truly apply; undecided: do not know (neither yes nor no); yes: applies quite a bit/applies very much.

satisfaction, or positive mood (data not shown), while they had significantly lower *positive interpretation of illness* scores (Table 5). These R−S− patients had the lowest engagement in *religious practices*, *spiritual mind-body practices,* and *existential practices*, while the differences with respect to *humanistic practices* were significant only in trend (Table 6). Of interest was the fact that *gratitude/awe* was lowest in R−S− patient, and the highest in R+S+ patients.

4. Discussion

Although it is not the "aim" of religion to generate well-being, several may nevertheless have the expectation that SpR is a resource to generate or at least maintain physical and mental health in cases of chronic illness. While it is true that SpR can be a resource to cope with chronic disease [1–12, 31], the current data indicate that even relatively young patients with MS regard their faith as a "strong hold in difficult" times. However, this attitude was not significantly related to the MS symptoms, course of diseases, daily life affections, fatigue, life satisfaction, or the development of *positive attitudes* as an adaptive coping strategy. Instead, patients with faith as a resource had significantly higher *reappraisal* strategies (i.e., *Interpretation of illness*), higher *gratitude/awe* scores, and somewhat better positive mood and *conscious way of living*. This means that their faith was not instrumentalized or reduced to a "tool" to restore health but was related to a more reflected look at what might be essential in life and to appreciate and value life despite the disease. Specifically, the scale *reappraisal: positive interpretation of illness* addresses patients' ability to reflect on what is essential in life; that illness may have meaning; that illness may be regarded as a chance for development; and to an appreciation of life because (or despite) of illness. Similarly, the scale *gratitude/awe* deals with the frequency patients experience strong feelings of gratitude, feelings of wondering awe, and how often they experienced and valued beauty in life. Both scales are moderately intercorrelated ($r = .42$) and implicitly address patients' ability to face life as it is. It was striking that these scales were moderately related to faith and to a religious attitude; in fact, engagement in *religious practices* showed the same correlation pattern as the statement on faith as a strong hold in difficult times.

What might be of relevance for patients which may have access to such a resource is not necessarily true for those lacking faith as a resource or who regard themselves as neither religious nor spiritual (R−S−). While these a-religious/sceptic patients did not differ with respect to daily life affections, fatigue, life satisfaction, or positive mood, they have lower abilities for a *positive interpretation of illness*, which was significantly higher in R+S+ and R−S+ individuals. Also *gratitude/awe* was significantly lower in R−S− patients with MS; moreover, they were less engaged in *existential practices*. This again indicates that interest in or openness for spiritual/religious issues may have an influence on how patients cope with illness and how they perceive and value their life and open their mind for others. This ability was low in R−S− individuals: they may have either no specific interest or are less willing to reflect these issues. How these individuals could be supported requires further exploration.

An important argument could be that particularly R−S− patients might suffer from cognitive impairments which thus could result in lower abilities to reflect and value life. Tinnefeld et al. [32] found that cognitive deficits may occur in patients with MS even in the absence of physical affections. Also Schulz et al. [33] pointed to the fact that even in the early stages of MS one may find discrete cognitive impairments. However, the patients enrolled in this study had moderate disability scores (mean EDSS scores 3.7 ± 1.8; 33% with EDSS scores 4.0 to 6.5, and 2% with scores > 6.5), and among them neither the EDSS scores nor self-perceived daily life affections, fatigue, life satisfaction, or positive mood did significantly differed between R−S− and SpR patients.

A limitation of this study was the cross-sectional design, which does not allow for causal interpretations; longitudinal studies are needed to substantiate the findings of this study. Moreover, a further limitation is that we recruited outpatients with rather moderate EDSS scores. Most of them have a normal daily life and thus may "ignore" their underlying disease. With respect to the categorized EDSS scores (see Table 1), patients with higher EDSS scores had higher fatigue scores ($F = 9.3$; $P < .0001$) and daily life affections ($F = 17.0$; $P < .0001$), and were more tired ($F = 2.9$; $P = .037$), while

Table 5: Spiritual/religious self-categorization and associations with health status, life satisfaction and adaptive coping strategies.

	Conscious way of living (AKU)	Positive attitudes (AKU)	Reappraisal: positive interpretation of illness (AKU)	Life satisfaction (BMLSS-10)	Positive mood (ASTS)	EDSS scores
R+S+	76.4 ± 13.3	72.3 ± 13.3	71.6 ± 18.5	66.9 ± 18.6	24.8 ± 6.4	3.4 ± 1.8
R+S−	71.5 ± 17.5	70.1 ± 14.4	47.4 ± 26.3	74.1 ± 13.1	26.8 ± 7.3	3.3 ± 1.8
R−S+	78.7 ± 20.0	80.3 ± 15.2	60.8 ± 23.0	70.1 ± 16.4	23.9 ± 7.7	3.6 ± 1.7
R−S−	71.1 ± 17.1	69.6 ± 17.9	40.1 ± 22.7	67.3 ± 17.8	24.1 ± 7.8	3.8 ± 1.7
All patients	73.0 ± 17.4	71.7 ± 16.7	48.4 ± 25.4	69.0 ± 17.0	24.7 ± 7.5	3.6 ± 1.8
F value	1.8	**3.4**	**14.2**	1.5	1.2	0.8
P value	n.s.	**.020**	**<.0001**	n.s.	n.s.	n.s.

Results are means ± standard deviation.

Table 6: Spiritual/religious self-categorization and engagement in spiritual practices/activities.

	Existential practices (SpREUK-P)	Humanistic practices (SpREUK-P)	Religious practices (SpREUK-P)	Spiritual mind-body practices (SpREUK-P)	Gratitude/awe (SpREUK-P)
R+S+	63.4 ± 23.8	71.1 ± 13.6	53.0 ± 27.4	36.7 ± 21.7	60.8 ± 21.8
R+S−	43.9 ± 23.3	66.4 ± 16.9	39.1 ± 19.4	15.6 ± 21.1	54.2 ± 19.8
R−S+	69.8 ± 22.0	69.9 ± 18.7	15.8 ± 23.1	44.0 ± 28.6	53.1 ± 24.1
R−S−	37.3 ± 21.8	61.8 ± 19.1	12.7 ± 14.1	14.1 ± 18.9	36.1 ± 18.4
All patients	46.7 ± 25.7	65.0 ± 18.3	22.8 ± 23.7	21.8 ± 24.4	45.2 ± 22.2
F value	**19.7**	2.5	**37.6**	**18.5**	**14.3**
P value	**<.0001**	.060	**<.0001**	**<.0001**	**<.0001**

Results are means ± standard deviation.

the other psychometric variables did not significantly differ (data not shown).

Further analyses with high-maintenance patients with progressive courses of disease are needed.

5. Conclusion

Although spirituality/religiosity is a relevant strategy to cope also in relatively young individuals with MS, faith as a resource was not significantly associated with mood states, course of disease, or life satisfaction. Instead, this resource was associated with their ability to reflect on what is essential in life, with the conviction that illness may have meaning and could be regarded as a chance for development, and to appreciate and value life. A recent systematic review found that there is evidence that specific approaches of mind-body medicine (i.e., yoga, mindfulness, relaxation, and biofeedback) might be helpful to ameliorate MS symptoms [34]. Particularly yoga and mindfulness training improved MS fatigue with low side effects. Both approaches can be regarded as secular forms of spirituality (although they can be found in specific religious contexts, too) which might be of interest for the majority of a-religious patients with MS because these interventions focus awareness on the self, environment, interaction with others, and life style. In fact, at least in healthy individuals within a 6-month yoga practice, a significant increase of specific aspects of spirituality (i.e., conscious interactions/compassion, religious orientation) and mindfulness can be observed [23]. Particularly R–S– individuals showed moderate effects for an increase of such conscious interactions (with others, self, and nature) and compassion. In contrast, religious individuals may find hope and hold in their faith, and related engagement in individual forms of religiosity (i.e., private prayers, meditation, rituals) and/or organized forms of religiosity (i.e., church attendance). Further research in this direction is needed.

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Research Article

Secular, Spiritual, and Religious Existential Concerns of Women with Ovarian Cancer during Final Diagnostics and Start of Treatment

Lene Seibaek,[1] Lise Hounsgaard,[2,3] and Niels Christian Hvidt[4,5,6]

[1] *Department of Obstetrics and Gynaecology, Aarhus University Hospital, Brendstrupgaardsvej 100, 8200 Aarhus N, Denmark*
[2] *Research Unit of Nursing, Faculty of Health Sciences, University of Southern Denmark, Campusvej 55, 5230 Odense M, Denmark*
[3] *Institute of Nursing and Health Sciences, University of Greenland, Greenland*
[4] *Klinik und Poliklinik für Palliativmedizin, LMU, Marchioninistr. 15, 81377 München, Germany*
[5] *Research Unit of Health, Man and Society (50%), Institute of Public Health, SDU, Odense J. B. Winsløwsvej 9B, 5000 Odense C, Denmark*
[6] *Freiburg Institute for Advanced Studies (FRIAS), Freiburg University, Albertstraße 19, 79014 Freiburg, Germany*

Correspondence should be addressed to Lene Seibaek; leneseib@rm.dk

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Introduction. This paper deals with secular, spiritual, and religious existential concerns during severe illness. *Materials and Methods*. Qualitative research interviews were made before and after surgery with women who underwent final diagnostics, surgery, and chemotherapy for ovarian cancer. By applying a phenomenological-hermeneutic text interpretation methodology the findings were systematically identified, placed into meaning structures, interpreted, and critically discussed. *Results*. The analysis offered insight into the complexity of challenges and personal development over time in being a woman with ovarian cancer during her first treatment period. Although the women experienced their health to be seriously threatened, they also felt hope, will, and courage. The diagnostic procedures and treatment had comprehensive impact on their lives. However, hope and spirituality were important resources of comfort and meaning. *Conclusion*. Hope and courage to face life represent significant personal resources that are created not only in the interplay between body and mind but also between patients and their healthcare professionals. The women dealt with this in a dialectical manner, so that hope and despair could be present simultaneously. In this process secular, spiritual, and religious existential meaning orientations assisted the women in creating new narratives and obtain new orientations in life.

1. Introduction

A vast body of international research literature points towards a consistent link between hope, spirituality, and health and describes the way spiritual and religious resources influence the physical and psychosocial well-being [1]. Based on the existing literature la Cour and Hvidt have concluded that when struggling with crisis and despair, humans variously employ secular, spiritual, and religious existential meaning resources [2]. This has also applied to the findings presented in this paper, even though our study was conducted in Denmark, what is known to be "the least religious nation in the world."

In our previous research of the lived experiences of Danish women undergoing ovarian cancer surgery we found that the women, despite being in a most vulnerable situation, demonstrated substantial inner resources in terms of hope, strength, will, and courage to face life [3, 4]. As they perceived inducing and strengthening hope to be very important to their survival, they put a strong emphasis on having a positive versus a negative mindset. Remarkably, this did not seem to contrast being fully aware of the risk of a fatal outcome.

While the concept of hope is by no means clearly defined, unifying or narrowing that concept is not the intention of this paper. In a concept analysis based on a literature review, Benzein and Saveman identified 54 different definitions

of hope [5]. Nevertheless, the authors argued for further widening of the understanding of the concept. We agree that limiting the definition might lead to the exclusion of important, not yet fully investigated aspects of hope. As hope was often studied in relation to burdensome or negative life events, Benzein and colleagues stressed, with reference to the work of the French philosopher Gabriel Marcel (1889–1973), that hope is experienced—and can be studied—where the temptation to despair exists [5, 6]. When people live their lives free of any major threat, they live in the general state of hoping that their lives will continue in the way in which they are accustomed. When threatened, however, this general state of hope mutates into an active state of hoping [7]. We find our work in line with this understanding. The diagnosis and treatment of a serious cancer disease has proven to be a period of time in which hope—like despair—is very much present.

2. Materials and Methods

2.1. Context. With only 2% of the population going to church once a week, Denmark represents a country where organized religion is hardly practised at all.

The study took place in a Danish University Hospital at a regional centre for surgical treatment of gynaecological cancer diseases. Among women suffering from gynaecological malignancies in the western world, ovarian cancer is the leading cause of death. Danish women have a very high incidence of and mortality rate from this disease [8]. During the last decade the five-year survival has been stable at approximately 40 percent [9]. This is probably because the majority of the women (66%) are being diagnosed in the advanced FIGO stages III and IV (FIGO: International Federation of Gynaecology and Obstetrics) [10]. In addition, 25% suffer from various sorts of comorbidity, a situation that seriously impacts health care seeking, the ability to go through effective treatment, and consequently also survival [11]. The aetiology of ovarian cancer is mostly unknown, but approximately 10% of patients have a hereditary component [12]. Furthermore, some correlation between lifestyle in terms of oral hormone therapy, a high intake of milk products, smoking, and excessive weight and the development of cancer or borderline tumours in the ovaries has been demonstrated [13]. The initial symptoms are often vague and nondisease specific, and there are no valid screening methods available [14]. The clinical pathway consists of diagnostic procedures, surgery and care, microscopy of the removed tissue, and followup, all within a period of three to four weeks [15]. Due to the nature of the disease, it is often not possible to obtain a verified diagnosis prior to the surgery. At the start of treatment this circumstance puts major psychological strains on the women as well as on their families [3]. After the surgery, the clinical pathway depends on the final diagnosis and staging. Women with spread of the disease receive chemotherapy in a series of four to six treatments. Women with localised or borderline disease are treated with surgery alone and scheduled for regular followups. Women with benign conditions have completed their treatment after the initial surgery.

2.2. Selection of Participants. Based on the results from the registry study concerning living conditions, age, and diagnoses, the women were strategically selected one by one via medical records to represent typical variations in the population of Danish ovarian cancer patients [16]. The study inclusion procedure was carried out when the women arrived at the hospital the day before surgery (Table 1). Women who were mentally ill, or did not speak Danish, were not selected.

2.3. Generation of Data. To gain insight into personal experiences from an individual life-world perspective, semistructured qualitative research interviews were used as the data collection method [17]. The experienced world, which gradually emerged through the interviews, was an interpreted world. Therefore, the interviews were analysed within phenomenological-hermeneutic interpretation theory inspired by Ricoeur, in which phenomenological description and hermeneutic interpretation are combined with the aim of explaining better in order to understand more [18, 19]. The interviews were performed with each woman alone with one interviewer. They were conducted by the first author, who has a professional background as a specialist nurse in cancer care. The interviews followed semistructured guides (Table 2). Further questions were based on the participants' individual reflections and experiences, with each woman being interviewed twice. The first interview took place on the hospital ward at the evening before the surgery. Based on clinical experience, this period of time represented a moment of quiet reflection for many. To obtain a balanced interview setting and to gain further insight into developing experiences, a second interview was made in the participants' private homes approximately eight weeks after discharge. In this way the women were offered an opportunity to reflect on the content of the first interview and to elaborate on personal viewpoints, and the findings from those follow-up interviews reflected narrations of human experience over time [17]. In doing so, we drew on Ricoeur's concept of emplotment [20], by which the human capacity of creating new narratives of their lives is perceived to be central in order to maintain a coherent, fluid, and stable identity during times of change. The interviews were digitally recorded and transcribed verbatim. The qualitative research software NVivo8 was used to systematise the findings and prepare the text for analysis [21]. Quotations were translated from idiomatic Danish to English by a professional copy editor who was not otherwise involved in the study.

2.4. Data Analysis. The analyses were inspired by phenomenological-hermeneutic text interpretation theory [18], which during the last decade has been methodologically developed further within the caring sciences [22–25]. Following this methodology, the interview findings were systematically identified, put into meaning structures, interpreted, and discussed. Further analyses took place in a dialectic movement between three analytic levels: Naïve understanding, structural analysis, and critical interpretation [18]. In this way the analyses moved towards deeper understanding of what the text referred to in the world [22, 24, 26]. Initial

Table 1: List of interview participants.

Number	Age	Diagnosis	FIGO[1] stage	Civil status	Number of children	Socioeconomic status
1	51	Ovarian cancer	IIIC	Single	0	Employee
2	29	Ovarian cancer	I A	Cohabiting	0	Student
3	62	Ovarian cancer	IV	Married	2	Retired
4	79	Ovarian cancer	I A	Widowed	1	Retired
5	57	Borderline	—	Single	1	Retired
6	66	Ovarian cancer	III C	Married	2	Retired
7	61	Ovarian cancer	III C	Married	3	Civil servant
8	72	Ovarian cancer	III C	Widowed	2	Retired
9	60	Ovarian cancer	I C	Married	2	Employee
10	51	Ovarian cancer	IV	Married	3	Official

[1]International Federation of Gynaecology and Obstetrics.

Table 2: Semistructured interview guide.

Preoperative interview (i) The evening before the surgery	Postoperative interview (i) Eight weeks after discharge
Feelings (i) How have you been doing, since surgery was decided? (ii) How are you doing at present? (iii) Do you feel ready to undergo surgery tomorrow?	Experiences of illness and treatment (i) How have you been doing, since your discharge from hospital? (ii) How did you experience your discharge?
Thoughts (i) What are your thoughts about the surgery tomorrow? (ii) What are your thoughts about the days after the operation?	Impact of illness and treatment on everyday life (i) How are you doing at present? (ii) How did you experience your first chemotherapy?[2]
Actions (i) What have you been doing these past days? (ii) Have you made any plans for the next days?	Impact of illness and treatment on future life (i) In what ways has the disease/treatment impacted on your daily life? (ii) What are your thoughts about the near future? (iii) Have you made any plans?

[2]Only women receiving chemotherapy were asked this question.

overview and interconnected understanding of experiences and actions were developed through nonjudgemental readings and rereadings of the interviews. In order to attain valid knowledge, the text must be objectified [25]. This took place during the transcription of audio files, condensation of meaning, and a structuring of quotations into patterns and subthemes. The structural analysis moved between the parts and the whole, between the empirical findings ("what the text said") and the meaning condensation ("what the text spoke of") [26]. In this way the structural analysis offered an explanatory perspective of experiences and acts. In-depth analyses were made by moving back and forth between the empirical level and the analytical level, between comprehending and explaining the matter of the text. Subsequently, the findings were critically interpreted and discussed. Through the critical interpretation and discussion, the findings moved beyond an individual, subjective level towards a universal, general level, moving from being the interviewed women's personal experiences and reflections towards identifying significant, valid facets of being-in-the-world as that woman undergoes final diagnosis and ovarian cancer surgery, starts chemotherapy treatment, or finishes her sick leave [3, 15].

2.5. Ethical Considerations. As the study addressed women who were undergoing surgery for a potentially life-threatening disease, carrying it out held substantial ethical considerations. During the interview period, the interviewees were seen and met as individual persons with whom the first author, via the interviews and other kinds of interaction, had a limited but mutual relationship. The second interview took place in the interviewees' private homes. By doing so, the interviewer participated in defined areas of women's private lives. The study focus, however, remained on their personal experiences and reflections concerning the research topics. As the first author was a guest in a private home, the interaction included telephone calls, saying hello to family members and pets, drinking coffee, and engaging in other kinds of friendly conversation.

The study was approved by the Danish Data Protection Agency (file no. 2007-41-1640). Audio files and transcripts were stored in accordance with the Agency's rules. Under the rules of the Central Denmark Region's Committees on Biomedical Research Ethics, the study did not need further approvals. The women were not invited to participate until a personal treatment plan was ready. Pursuant to the rules of the Helsinki Declaration, the women received both oral and written information before giving their consent to participate [27]. In case the interview should initiate specific worries concerning the ovarian cancer disease or the treatment, an extra follow-up visit in the outpatient clinic was offered.

2.6. Strengths and Weaknesses in relation to the Applied Methodology. Conducting repeated semistructured research interviews with strategically selected participants proved sufficient to obtain rich and saturated interview data. Although it might be considered a weakness that we did not include the perspective of relatives, that design enabled the women to fully express personal concerns in relation to their family and friends. All the women, who were able to participate in both interviews, indicated that the first interview was conducted in an appropriate manner, and furthermore, the second interview enabled us to study the development of hope and the courage to face life during the perioperative period.

The fact that the first author had been employed as specialist nurse in the study setting might have represented a limitation, as she could be influenced by preexisting perceptions and positions. On the other hand, her skills as an experienced cancer nurse and her background knowledge of the clinical aspects of the participants' medical history enabled her to stay compassionate yet still focused during the data collection. That fact that none of the interviewed women made use of the optional follow-up visit, which was offered in relation to the interviews, supports this assumption. Furthermore, intellectual distance in the subsequent analyses was sustained by awareness of potential preconceptions and by the applied interpretation methodology [26, 28].

3. Results

All the invited women agreed to participate in the interviews; however, one woman was only interviewed preoperatively due to her death shortly after the operation. The interview material finished with ten participants. At that point the data had ensured a sufficient spectrum of variances and could still be analysed as a whole [29, 30]. The interviews lasted from 19 to 111 minutes each (mean: 43 minutes). The women's average age was 58.8 years. Five women had retired, and four were living alone. At the end of the study period participants 1, 3, 6, 7, 9, and 10 had started chemotherapy because their disease had spread (Table 1).

The naïve (nonjudgmental) reading revealed that the diagnostic procedures, surgery, and chemotherapy had comprehensive impact, not exclusively on the women's physical bodies but just as much on their everyday lives. Throughout the perioperative period, well-being and discomfort seemed to occur in cycles. As well-being and discomfort were individual experiences caused not only by the disease itself but also by its treatment, the women did not go through identical cycles. Women who suffered from late stage disease in which the ovarian cancer had spread seemed to experience overall relief of their discomfort after the surgery and during the chemotherapy. Women with localised or borderline disease who did not have any substantial physical discomfort initiating their diagnosis experienced their health to be worsened during treatment. As individual and diverse as their disease reactions were, their needs and experiences of hope were diverse and individualized.

The structural analysis established a main theme concerning "Hope and existential concerns during final diagnoses and first treatment period" (Table 3). This theme offered insight into the complexity of the challenges and personal development over time of being a woman with ovarian cancer during her perioperative period. It was based on the overall finding that although the women did experience their lives to be seriously threatened during diagnoses and start of treatment, they also felt a surprisingly strong hope, will, and courage to face life. The theme "Hope and existential concerns during final diagnoses and first treatment period" held three subthemes: "Courage to face life," "Hope," and "Existential concerns." These subthemes were empirically identified through patterns in the text, which consisted of descriptions of personal intentions, actions and living conditions, personal reflections, and experiences during the study period. In the following section the subthemes will be critically interpreted and discussed as separate analytic categories. This distinction is made only for reasons of transparency and presentation, as the themes are in fact related to and mutually influenced by each other (Table 3).

4. Critical Interpretation and Discussion

The distribution in age, the socioeconomic status, and the living conditions of the interviewed women reflects a population where the majority are elderly, retired, and living alone with limited financial resources [16] (Table 1). Seen as a group, the Danish ovarian cancer patients can therefore be characterised as physically and socially vulnerable.

4.1. Subtheme I: Courage to Face Life. Subtheme one deals with the significance of having courage to face life, and the way flexible and person-centred care could support this courage.

4.1.1. Courage to Face Life Is Important, but It Is Not a Cure. Some women put a strong emphasis on having personal courage to face their present circumstances in life: "*Everybody has to face some adversity in life, right? But it's probably also my nature. When I meet a problem I simply try to solve it—I never give up!*" (6).

Some epidemiological studies have shown that courage to face life might have a certain positive impact on survival odds [31]. However, we believe one should interpret such results carefully due to the methodological challenges of investigating the phenomenon [32]. In our study courage to face life was rather seen as an approach towards life, a cradle gift, or a coping strategy which assisted those who possessed it to go through treatment the best possible way. None of the women believed that this capacity could actually fight their disease (Table 3). In a caring science perspective, courage to face life embraces concepts of strength and will [33]. *Strength* relates to the experience that the body and its reactions are well-known and predictable when healthy. During illness, the body and its reactions can change into unknown and unpredictable bodily sensations. As diagnostic difficulties are common in ovarian cancer, feelings of uncertainty and of having been let down by the body may be present. *Will* dictates that a certain amount of mind power or endurance

Table 3: Structure analysis of main theme: hope and existential concerns during final diagnostics and first treatment period.

Empirical findings	Meaning condensation	Subthemes
"I believe that in case of serious illness a certain amount of courage might be helpful—but still, I've seen people with lots of guts succumb to cancer. I've seen that."	Courage to face life is important but not a cure	Courage to face life
"If you're sad sometimes they [the nurses] come and sit with you for a moment—if they can feel there might be something wrong."	Care can influence courage to face life	
"There was this out patient visit [at the department of oncology] where they spoke rather negatively of the effect of chemo. Somehow, this took away my hope. Because... well, I was still alive, but I felt like a really poor life when I left the department."	Care influences hope	Hope
"I certainly haven't given up yet. But I try to be realistic—my notion of becoming a very old lady has been somewhat downplayed, due to this."	Notions of the future are being revised	
"I have a cousin—she's had the same kind of disease. She became a very positive person—I hope the same will happen to me"	Personal experiences can impact hope	
"Well, once you've had a cancer disease you've got to live with that. There are no guarantees that it won't ever come back."	Life has forever changed	
"Right from the beginning—if I should cut to the bone—I really think it's about that I haven't ever been afraid of dying."	Death becomes a reality	Existential considerations
"In that sense I still believe that the world can progress. Because, still there are people... who love each other, and who try to understand—I'm part of that"	Personal hope can be integrated in a universal understanding of life	
"Of cause it would be terrible [to die right away], but I've lived my life. I've had a good education and children, I've worked for many years, and I've had friends and experiences—a good deal of failures but also some success, right? I've had my life"	Existential considerations can add meaning to the disease	
"I believe that someone's holding his hand over me."		

is needed to undergo the lengthy diagnostic procedures and treatment modalities.

Some of the women reached normal levels in their physical health status during the study period; however, mental recovery seemed to be a lengthier process. This also applied to those who had their cancer diagnosis refuted or who were cured by surgery. This phenomenon is well-known in relation to survivorship, although Price et al. have found that higher symptom burden and stage of disease significantly predict posttreatment depression and anxiety [34]. Mental health and quality of life in women with ovarian cancer have been the subjects of several questionnaire studies [35, 36], but so far these have not led to ways of sufficiently addressing the patients' personal needs. Although a supportive rehabilitation program should include more extensive counseling and followup, there is evidence that telephone followups can provide some psychosocial support [37].

Difficulties concerning communication and approach in the transition between treatment modalities and settings were found. This reflects a well-known yet still insufficiently addressed phenomenon in the organisation of healthcare [38]. Some women experienced that, while the surgeon oncologist had focused on what was removed of the tumour, the medical oncologist focused on what was left behind. In a strictly biomedical perspective, it is obvious that such changes in focus have to do with various steps of the clinical pathway. But from a patient perspective, these changes occurred in very vulnerable phase: during transition from surgery to chemotherapy, moving from one staff to another, and from one hospital department to another. This seemed to cause the women substantial mental strain and disturbance. Considerable professional awareness of the power relations and imbalances, embedded in the organisation of healthcare, is therefore required.

4.1.2. Care Can Influence the Patients' Courage to Face Life. When treatment and care were delivered in a person-centred approach, the women felt safe and cared for, not only as patients but also as persons: *"He is such a nice man (the surgeon). His wife was born in the village I come from—I knew her when she was a girl. And he said to me: I'm married to that little girl now"* (3).

As described by Travelbee, establishing a human-to human relationship [39] includes perceiving, thinking, feeling, and acting in relation to the other person. In this way, the patient can be responded to as a unique human being representing so much more than her disease. However, this requires that the healthcare professionals possess the empathy, the courage, and the willingness to breach barriers of title, position, and status.

4.1.3. To Summarize. From a patient perspective, sustaining courage to face life is crucial in going through ovarian cancer treatment. However, this courage can be put under pressure, not only by the cancer diagnosis and treatment but also by the organisation of patient pathways and by healthcare professionals' attitudes. This seems to constitute a substantial challenge especially in relation to information, transition, and approach. Some of these can however be remedied when care is delivered in a person-centred approach.

4.2. Subtheme II: Hope. Subtheme two deals with the way in which care influences hope, how notions of the future were revised, how personal experiences might impact hope, and with the perception that life had forever changed. The structure of hope is very complex. Most of us are not aware that we constantly live in a state of hope. Gabriel Marcel, the great French philosopher of hope, has said that: "Hope is for our soul what breathing is for our organic bodies" [6, page 9]. Our living in hope is so deeply integrated that we live in confidence that tomorrow will bring a new day. So, according to Marcel, we are normally living in the state of "universal hope" [6]. If universal hope is challenged, for instance, by a serious diagnosis, the structure of hope changes towards specific hope, hope for something, for instance, the hope for getting cured. In this way hope and hopelessness are two sides of the same coin as we grapple to come to terms with both disease threats and the prospects for being cured.

4.2.1. Care Influences Hope. Inducing and strengthening hope seemed so important that the women became reluctant to listen to healthcare professionals who indicated that being fully cured might not be an option: *"If you're not allowed to believe in the positive signals from your own body—if it's almost as if somebody tells you its wrong to believe in them—that's really not good. Because that's where hope should be and optimism too, right?"* (7).

The women dealt with this in a dialectic approach. They also expressed awareness of their generally bad prognosis and risk of a fatal outcome. However, at this point, their main focus was on staying alive, and it seemed important to them that their healthcare professionals, despite the prognosis, maintained a personal engagement and sustained hope. This was done while being realistic, as the women's active hope represented neither escape from reality nor denial.

Independent of stage and prognosis, it was not simply that their bodies were impacted by disease and treatment, it was the women's whole lives. This overall finding highlights the importance of initiating and maintaining a personalised and holistic approach right from the commencement of treatment. But specialization in healthcare does not facilitate a comprehensive approach. Considering the increasing comorbidity and the extensive treatment regimes, together with the documented positive effect of a holistic and caring approach, one might consider expanding the concept of serious disease to encompass also its impact on peoples' everyday lives [40].

In our previous research we found that hope seemed strongly related to bodies, as hope was initiated and strengthened by improvements in the physical condition [3]. Although Benzein et al. have already suggested that physical well-being might contribute substantially to the maintenance of hope [41], hope has primarily been studied and dealt with in an existential context within the caring sciences [7, 42]. It is therefore remarkable that hope and courage to face life were reinforced through fulfilment of fundamental physical needs. Although hope is related to the dependence and care of others, it may also be understood as future-oriented, specific, and active [6, 39].

4.2.2. Notions of the Future Are Being Revised. During the study period the women revised their notions of the future more than once: "*When you get such a disease, then suddenly there's a frosted door on your time line, suddenly you cannot see that far*" (9).

Prior to their surgery, this was primarily due to fear of not surviving surgery or anaesthesia or of developing complications. The women described themselves as well informed; nonetheless they had difficulties in describing their near future in words. This situation changed from the first to the second interview, during which most women had regained the capability of making plans for the immediate future. Women who were cured by surgery dealt with long-term worries concerning recurrence and late effects, while women with late-stage disease seemed to have a much shorter time horizon.

4.2.3. Personal Experiences Can Impact Hope. When experiencing physical and mental comfort, strong feelings of hope arose. It seemed as if the positive experiences of being well-taken care of enhanced confidence and safety. *"Then he (the doctor) told me: you will never be fully cured. But I did not ask him—I know that when it comes to cancer you should never ask a doctor such a question... I think it was cruel of him to take away my hope, do not you think so too?"* (8).

Similarly, however, negative experiences enhanced feelings of insecurity and distrust. Still, these experiences also increased awareness of personal needs and expectations. As Travelbee, drawing on the work of Lynch, phrases it: "Hope can be the sense of the possible" [39, 43]. As their hope for something was triggered, previous experiences with illness and other kinds of adversity in life assisted the women in going through their present challenges.

Substantial variation in the personal approach towards the perioperative period was found. As illustrated by interviewee three, expressing her wishes of "*getting better and get on my feet again*" (3), some did not expect themselves to be able to influence their situation on any practical level. In her point of view, she could only hope that her situation would improve: *"I hope it will happen*" (3). In a religious context, the quotation might be understood as a direct or indirect expression of prayer. Rabbi Spicvak has been quoted as saying: "*Wishing is praying, and who, if sick, does not wish with all the intensity of his soul for recovery?"* [44]. Some women were more inclined to pray to help the doctors make them well, something that has been observed both in the USA [45] and in the Nordic countries [46]. Others would not seek the influence of any

higher power, relying primarily on personal strength and spirit: "*I am the one who has to go through it*" (6). In this approach, the relatives and staff were seen as the primary partners in a mutual effort.

Our attention was drawn towards the fact that only one woman represented the self-managing and resourceful patient. Compared to the physical condition, the socioeconomic and psychosocial conditions are often given less attention in healthcare [47, 48]. However, in a life with massive social problems and complex disease, an operation due to suspected ovarian cancer might merely be parenthetical. This was illustrated by interviewee five, who took care of her demented and very mobile husband 24 hours a day in a countryside cottage with no modern conveniences. Asked of her concerns regarding a potential cancer diagnosis she declared: "*I haven't done any speculations on that—I simply haven't got the time*" (5).

Knowing or hearing of persons who had survived a serious cancer episode seemed to enable the women to create inner pictures of a life "after treatment." In this way, narrations of survival sustained hope. This could be expanded to comprise the hope of a future life that was even better than the present: A life without stress as a happier, more vivid person; a life in which hope was simply the basis—*hope in itself*.

4.2.4. Life Has Forever Changed. The experience of a serious cancer diagnosis and the fear of recurrence represented a lifelong companion: "*The day I was told that I had a really serious cancer disease was an absolute landmark*" (9).

Although the women considered their surgical procedure to be dangerous or even life-threatening, they did not question its necessity, presumably because they perceived their condition to be irreversibly progressive or because it already felt impossible to live with. In this way the diagnosis represented a point of no return.

4.2.5. To Summarize. During the study period the disease and treatment had substantial impact on the women's everyday lives. This circumstance gave rise to revised notions of their future and they began to create new narratives of their lives. Experiencing comfort and strength reinforced hope and courage to face life during this process. Hope was dealt with in a dialectic approach, from constituting a basis in life (hope itself) towards actively hoping for something. In this process hope and despair can be simultaneously present.

4.3. Subtheme III: Existential Considerations. Subtheme III (Table 3) dealt with existential considerations of death, of hope being integrated into universal life, and of the way such considerations added meaning to the disease.

4.3.1. Death Becomes a Reality. The women perceived death to be the immediate consequence of developing complications or the long-term outcome of the chemotherapy not being effective: *"It just crossed my mind the other day: you could actually die during the surgery. Life is fragile."* (7).

Talking of death in a country like Denmark, previously discussed as perhaps the least religious nation in the world, has become ever more problematic as religious discourse fades [49, 50]. But although there might be this tendency of shying away from discussing death in the population, the women spontaneously touched upon the subject the evening before their surgery. The diagnosis gave death a sudden reality through which a need to speak of their death emerged. As some of the women did not have a previously developed language for such considerations, various ways of talking around the subject were applied: *"All my folks have died of cancer. Daddy died of it—he was gone after three weeks, and Mama died of a brain tumour.... So, you think it might be something like that—but then again—it might not be that bad after all*" (3). Besides constituting a severe strain, the increased awareness of their mortality seemed to create a strong focus on staying alive. Women receiving chemotherapy continued to reflect on this: *"I've always been extremely happy about my job. But if my time horizon becomes very short, then I won't spend the rest of my life working, that's for sure. Then I will focus on my family*" (10). Even though death was not perceived as imminent, but rather something that might happen in future if chemotherapy did not have the desired effect, their reflections had become increasingly explicit and specific.

4.3.2. Personal Hope Can Be Integrated in a Universal Understanding of Life. The women described hope as multidimensional and constantly changing: "*Somehow it all makes sense, right? The universe wouldn't be the same without me—at least I think. I should be here, too. Nobody knows for how long*" (8).

The women expressed a multidimensionality of hope [51, 52]: hope for a cure, hope for a good life, long or short and in spite of disease, hope for death with dignity, hope that there would be something good waiting for them after death, and so forth. Universal hope for progress and love between human beings in a future of which they were no longer part was also expressed. Sometimes the dimensions of hope seemed to conflict, analogous to what the Canadian philosopher Charles Taylor phrases as "cross-pressures" [53, 54]. *"It was relatively easy when I was a child—to imagine God sitting up in the sky. The universe was so much smaller. Jesus was just nearby—I mean, literally*" (7). The need for meaning and something to hope for seemed so significant that some of the narratives of hope appeared to be contradictory: "*Whatever happens afterwards—if there is something afterwards, I'm not sure of that. I think there might be a dimension in life of what was mine. Some sort of gratitude of life—or the opposite. Some sort of love—or the opposite*" (7). As a consequence new narratives emerged: women who did not consider themselves religious, and who were otherwise informed by scientific world views, seemed to give in to a need for meaning, hoping that life would go on in some form even if their earthly death would be the immediate outcome.

Like the notion of hope, the concepts of spirituality and religiosity are somewhat unclear. Spirituality used to be an integral part of the overarching concept of religion and religiosity and was mainly seen as lived religious life or simply piety [55]. For example, William James entitled

his seminal work on the psychology of religion "The Variety of Religious Experience," whereas today he might simply have called it the "The Variety of Spiritualities." The term Spirituality emerged in popularity at the beginning of the 20th century during which the concept came to be used as a new word for the mystical life and more generally the life of faith or simply religious life and experience. To study the life of faith is obviously not a new invention, although spirituality was formerly embedded in and seen as an aspect of religion, never contrasted with it. However, things started to change in the beginning of the 20th century, where the concept of spirituality, disentangled from religiosity, emerged in the Alcoholics Anonymous (AA) movement with its emphasis that all attending the AA meetings should have some kind of faith, spirituality, without determining what kind of religious content and practice such spirituality should have [56].

Spirituality and religiosity have become differently evaluated, and Zinnbaue et al. speak of "Good spirituality, bad religion," spirituality being defined as the broad, individualistic concept that every human can fill with her or his own meaning, whereas religiosity relates to dogmas, institutions, rituals, and communal life [57]. In relation to healthcare Koenig argues that spirituality is the best clinical precept because it is so broad that it can engage all patients; however, as a research concept it seems to be too broad and imprecise [58].

Although Denmark is considered as one of the least religious nations in the world, many Danes still call themselves believers without wanting to define precisely what this entails: "I'm a believer, but I'll be damned if I'm religious" as Ina Rosen entitled her PhD based on interviews with young Danes and Swedes [59]. In such a secular culture the broader and fuzzier concept of spirituality therefore seems to have more traction than the more traditional and dogmatic concept of religiosity. Along these lines it is of little surprise that the informants in this study were very careful in the way they spoke about their disease-related spiritual thoughts. Nevertheless, the findings lend insight into how Danish women with ovarian cancer may experience and describe spiritual concerns in relation to their disease.

4.4. Existential Considerations Can Add Meaning to the Disease. A consistent characteristic of the existential considerations was the search for meaning—not simply the meaning of getting the disease, but just as much the meaning of life: *"I wouldn't characterise faith as being positive in itself... but it provides a sense of being here, as a human being, with a certain destiny and certain experiences"* (7).

Diverse meaning orientations and constructs could be organized according to the three basic dimensions of *existential meaning orientations* as delineated by la Cour and Hvidt: secular, spiritual, and religious orientations [2]. These dimensions can be clearly distinguished but are nevertheless related (Figure 1). Secular existential orientations have to do with everyday life without taking on a spiritual or religious character, and spiritual existential orientations relate to an individual spiritual life, whereas religious existential orientations are linked up with doctrines and promises of salvation and support from religious communities. Secular

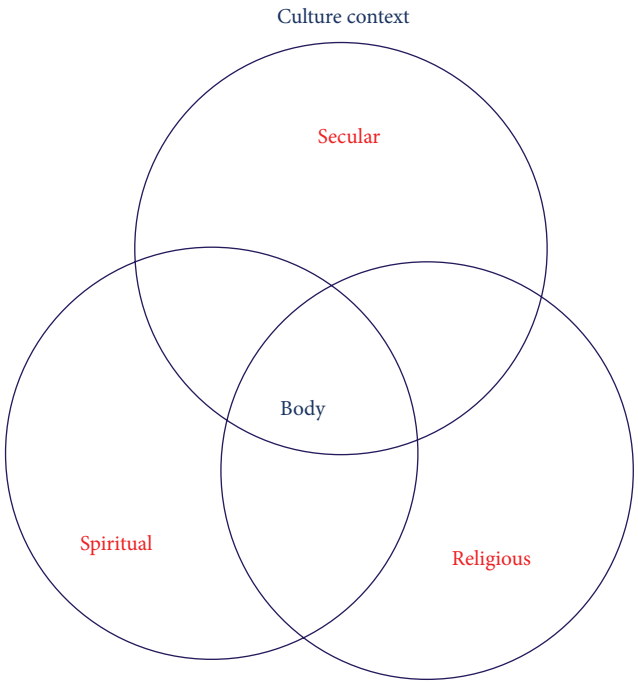

Figure 1: Relation of existential meaning-making domains.

resources that initiated the sense of hope and meaning could, for instance, be the importance of a job, the joy of a pet animal, or the pleasures of gardening. When thinking of spiritual resources, the women would describe more-or-less conceptualized spiritual practices such as meditating or praying in moments of distress or going into nature to obtain peace in some contemplative manner. In relation to religious resources, the women might pray that they would go safely through the operation or seek comfort in thoughts of an afterlife. This was expressed in a nonreligious everyday language or as the perception of a guardian angel but could also be rooted in a specific religious community (Table 3). These quotations represent glimpses of a reality typical for secular culture. The language for existential meaning orientations is anything but bold, held in a rather nontraditional religious language, but with openness to a transcendent reality.

Some women were convinced that their disease had developed by chance and without any reason: *"I think it strikes at random"* (6), while others tended to believe that their disease held psychobiological elements such as upholding a lifestyle out of sync with nature: *"There are a far too high contents of hormones in conventional milk. And when you've got a hormone sensitive cancer disease... the farmers are pushing the production of milk too far"* (10). One woman had a heredity component in her disease development: "*I have a gene mutation that gives me a fairly large risk of getting one or the other* (breast or ovarian cancer), *so it was sort of like, I had resigned myself: It had to come sometime*" (9). This knowledge had prepared her for a potential cancer diagnosis, but on the other hand it had brought about worries and feelings of guilt: *"It has really been my biggest concern—if I pass it on to my children and grandchildren."* (9).

4.4.1. To Summarize. During final diagnoses and start of treatment, death becomes a reality. As death can be caused not only by the disease but also by its treatment, it becomes closely related to both. This generates a need to speak of death and of the meaning of life in an explicit and specific manner, which might be in conflict with previous narratives of hope and existential considerations. Through the process of existential meaning-making, new narratives and orientations can emerge.

5. Conclusions

To involve patient resources has become a mantra in health care, including within the context of cancer treatment and care. However, while this approach might sound obviously correct, implementing it in daily clinical practice has proven to be difficult.

Hope and courage to face life represent significant personal resources that are created not only in the interplay between body and mind but also between patients and their healthcare professionals. The overall finding that it was not simply the women's physical bodies but rather their whole lives that became impacted by the disease and treatment highlighted the importance of maintaining a professional engagement and holistic approach from the beginning of treatment—in particular during highly specialised fast-track clinical regimes.

The women dealt with their hope dialectically so that hope and despair could be presented simultaneously. Experiencing personal comfort and strength can reinforce hope, and we find it fair to conclude that the patients' inner resources thus can be activated and strengthened by adjusted information of the disease and its treatment, psychosocial support, and physical care right from the commencement of the treatment modalities.

During final diagnosis, death is perceived to be closely related to both the disease and its treatment. Through this recognition, a need to speak of death and the meaning of life in an explicit and specific manner emerges; this need can be in conflict with the existing narratives of hope. However, existential meaning-making might assist the women in creating new narratives and through this process obtain new orientations of their lives.

6. Implications for Clinical Practise

Based on the findings presented in this paper we suggest the following.

(i) That person-centred care is trained and implemented in oncology settings.

(ii) That healthcare professionals focus also on the general health and everyday lives of the patients during treatment.

(iii) That physical comfort and well-being are seen, not as excessive luxury but as important tools to sustain and strengthen hope and courage to face life during treatment.

(iv) That communication and cooperation during transitions are further developed and prioritized.

(v) That supportive followup and rehabilitation are offered as an integrated part of the treatment for patients in need of it.

(vi) That patients are given the opportunity to develop, share, and adjust their narratives of illness during their treatment trajectory.

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Review Article

Spiritually and Religiously Integrated Group Psychotherapy: A Systematic Literature Review

Dorte Toudal Viftrup,[1] Niels Christian Hvidt,[1,2,3] and Niels Buus[1]

[1] *Health, Man and Society, Institute of Public Health, SDU, Odense J. B. Winsløwsvej 9B, 5000 Odense C, Denmark*
[2] *Clinic and Policlinic for Palliative Medicine, LMU, Marchioninistraße 15, 1377 Munich, Germany*
[3] *Freiburg Institute for Advanced Studies (FRIAS 2012-14), Stadtstraße 5, 79104, Germany*

Correspondence should be addressed to Dorte Toudal Viftrup; dviftrup@health.sdu.dk

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We systematically reviewed the research literature on spiritually and religiously integrated group psychotherapy to answer the following three questions: first, how are spirituality and religiosity defined; second, how are spiritual and religious factors characterized and integrated into group psychotherapy; and, third, what is the outcome of the group psychotherapies? We searched in two databases: PsycINFO and PubMed. Inclusion and exclusion criteria and checklists from standardized assessment tools were applied to the research literature. Qualitative and quantitative papers were included. In total, 8 articles were considered eligible for the review. Findings from the evaluation suggested that the concepts of spirituality and religiosity were poorly conceptualized and the way in which spiritual and religious factors were integrated into such group psychotherapies, which distinguished it from other types of group psychotherapies, was not fully conceptualized or understood either. However, clear and delimited conceptualization of spiritual and religious factors is crucial in order to be able to conclude the direct influences of spiritual or religious factors on outcomes. Implications for spiritually or religiously integrated group psychotherapy and conducting research in this field are propounded.

1. Introduction

Spirituality and religion have received increased attention in health research, and they appear to be mostly associated with quality of life and improved health [1, 2]. The role of spirituality and religiosity in physical and mental health has been addressed in medical, psychiatric, psychological, and behavioral medicine journals, and evidence suggests links between improved health and spirituality and religiosity [3]. For example, a Danish cohort study with 10800 Baptists and Adventists has pointed to decreased risk of cancer, COLD, coronary heart disease, and some psychiatric disorders. [4]. Moreover, spirituality and religion have also been increasingly viewed as important components of people's lives that can be successfully attended to in mental health treatment [5]. Several studies indicate that spiritual and religious people benefit from spiritually and religiously integrated interventions [5], and there is a substantive body of literature on how to integrate spirituality and religion into psychotherapy [6, 7]. For example, Rye et al. [8] investigated the effectiveness of secular and religious forgiveness interventions. However, they found no significant differences when directly comparing secular and religious participants on primary or secondary outcomes. Different therapeutic approaches with an integration of spirituality and religiosity [3, 9] and psychotherapy with specific religious groups [10] have been propounded. However, the integration of spiritual and religious factors is not fully understood. Until now, most empirical studies on spiritually and religiously integrated psychotherapy have evaluated the effectiveness of the complete intervention, but a clarification of the spiritual and religious factors, separating spiritually and religiously integrated psychotherapy from other types of group psychotherapy, remains unanswered.

Furthermore, integration of spirituality and religion into group psychotherapy is an underresearched area of inquiry

compared to psychotherapy with individuals [6, 7, 11]. The relatively few empirical studies on spiritually and religiously integrated group psychotherapy focus on the effectiveness of the complete intervention [5]. However, the way in which these studies integrate spiritual and religious factors into group psychotherapy and what constitutes these effects remain unclear.

The paucity of studies on group intervention with integration of spirituality and religion is surprising because spirituality and religion most often develop and are practiced in communities with groups of people who share the same convictions and understandings and because religion is a group phenomenon, one of the earliest forms of a large group [12]. Psychological group interventions, which integrate spirituality and religion, might therefore benefit more from the psychological dynamics of spirituality and religion than individual interventions. Studies indicate that group psychotherapy interventions are time efficient, economical, and effective in improving coping skills and quality of life and reducing psychological and physical distress [13, 14].

More research-based knowledge about the spiritual and religious factors and the effects they have in spiritually and religiously integrated group psychotherapy may be beneficial to healthcare. We therefore undertook a systematic search of the literature to explore studies on spiritually and religiously integrated group psychotherapy. The purpose was to critically evaluate and summarize state of knowledge concerning the complexity of spiritual and religious factors integrated into group psychotherapies and, furthermore, to highlight important issues concerning spiritual and religious factors that research has left unresolved.

2. Theoretical Perspectives

Several studies have indicated that people's spirituality and/or religious faith and practice increase, when experiencing personal crisis due to illness or other circumstances [15–17]. Studies have also revealed how spirituality and religion as a meaning-system, distinguished from other meaning-systems, play a significant role for people in crisis [18–21]. The meaning-function of spirituality and religion for people in crisis may be superior compared to other meaning-making resources because spirituality and religion entail belief in a higher principle or force that goes beyond human life and that may provide help and comfort during crisis. The spiritual and religious meaning-function offers meaning in all aspects of human life from birth to death and particularly in a believed afterlife [18, 19]. However, even among spiritual and religious people a significant variance within the importance of spirituality and religion as a meaning-system exists. For some, spirituality and religion are at the center of their lives, and, for others, spirituality and religion play a minor role in their psychological well-being [3]. Therefore, the importance of spirituality and religion to the individual can be expected to influence the spiritually and religiously integrated psychotherapy as clients' motivation for therapy and faith in the therapy are crucial factors for determining the outcome of the therapy [22]. We will elaborate on this by presenting the common factors models after defining spirituality and religion as it is applied in the paper.

It is challenging to define spirituality and religion and to differentiate between the two concepts [23]. However, definitions and operationalization of these concepts in empirical studies will affect the focus and the outcomes of the study, and insufficiently defined concepts will be a source of error.

There are different approaches to studying spirituality and religion, and Zinnbauer et al. [24] divide these into traditional and modern approaches. The traditional approaches to studying spirituality and religion view religion as a broadband construct, where spirituality is not explicitly differentiated from religion but much rather is integrated to it and characterized as *lived religion* or *piety* [25]. Within traditional approaches personal religiosity is emphasized, and religion can be both a positive and a negative construct. The modern approaches, however, view religion as a narrowly defined construct, polarized from spirituality. The modern approaches emphasize religion as external, instrumental, and "bad", whereas spirituality is personal, relational, and "good" [26]. Zinnbauer et al. [24] and Pargament [26] criticize the traditional approaches for not distinguishing between spirituality and religion and the modern approaches for polarizing the two concepts. Pargament [26] critically discusses the problems with this polarization of spirituality and religion.

Pargament forwards three main critiques. The first critique concerns the tension between the two concepts, which many theorists emphasize but which most believers do not experience. Surveys in the United States conducted by Zinnbauer et al. [27] have shown that when forced to choose 74% label themselves as both religious and spiritual, 19% are spiritual but not religious, 4% are religious but not spiritual, and 3% are neither religious nor spiritual. A cross-cultural study conducted by Keller et al. [28] indicated that the same pattern can be observed in Europe. Thus, the distinction has been characterized rather as a humanistic depreciation of religion more prevalent in academia than in the world of believers [29].

Pargament's second critique concerns the decontextualization of spirituality. By their definition of spirituality, most theoreticians assume that the spiritual dimension of life unfolds in a vacuum. Pargament argues that the spirituality of the individual arises, develops, and unfolds in a larger religious context, even if that context has been rejected. Many researchers agree. Thus, for instance, Moberg [30] is critical of the possibility of evaluating spirituality per se and calls researchers to be context-aware and implement measurement instruments targeted at the particularities of the religious group of people under scrutiny.

Pargament's third critique concerns romanticizing spirituality as only positive, personal, and linked to the best in human nature. Confronting such a notion, Pargament emphasizes that the spiritual dimension of life can be both constructive and destructive [9]. In the same vein, Koenig [31] argues that this positive understanding of spirituality has affected the instruments used to measure spirituality; measures of spirituality are contaminated with positive psychological traits or human experiences. Spirituality will always correlate with mental health if positive mental health and

human values become a definition for spirituality. Spirituality, gauged by good mental health measurements, will always be tautologically correlated with good mental health [31].

The importance of clear definitions and operationalization of these concepts is also apparent in empirical studies and clinical praxis. Obscure definitions create uncertainty about what is actually being studied and integrated into psychotherapy. The problem of tautology will affect the outcomes and can become a source of error of a study. Furthermore, without clear definitions psychologists and therapists in the clinical praxis are without guidelines when they seek to integrate spirituality and religiosity.

For this study, we applied the definition for religion and spirituality propounded by Pargament. He defines religion as *the search for significance in ways related to the sacred*, and spirituality as *the search for the sacred*. These definitions take into account the critiques proposed above. These definitions are dynamic because they incorporate the motivating force within all people towards spirituality and they take into account both the positive and negative aspects of spirituality. Furthermore, Pargament believes that the most critical function of religion is spiritual in nature. Despite the many purposes of religion, its most essential function is the desire to form a relationship with something or someone considered sacred.

In the present paper, the differentiation between traditional and modern approaches, Pargament's three points of critique of the modern approaches and Koenig's critique of tautological measurements, will be used to evaluate the definitions used in the studies and the spiritual or religious outcomes presented in the studies.

In order to critically evaluate the effect of integrating spirituality and/or religiosity in group psychotherapies, we found it necessary to also take into account other psychological factors, such as the common factors [22] of psychotherapy, which could have affected the outcome of the interventions.

The medical model has dominated research in psychotherapy. The medical model emphasizes that the main purpose of research in psychotherapy is to examine the effect of specific therapies on specific mental illnesses [32]. The medical model assumes that there is a psychological explanation for the patient's mental disorder, and that there is a mechanism of change consistent with this theoretical explanation. The mechanism of change then suggests a particular therapeutic action, and this action is solely responsible for the benefits of psychotherapy [33].

As a response to the medical model, Duncan et al. [22] propounded the *common factors models*. The common factors models emphasize the collaborative work of the therapist. They focus on the therapist, the client, the transaction between them, and the structure of the treatment that is offered [33]. Hubble et al. [34] divide the common factors in four elements. (1) *Client and extratherapeutic factors* encompass all that affect improvement independent of treatment, for example, clients' readiness for change, strengths, resources, level of functioning before treatment, social support network, socioeconomic status, personal motivations, and life events. (2) *Models and techniques* encompass the clients' and therapists' faith in the restorative power and credibility of the therapy. (3) *Therapist factors* concern the effectiveness of the person of the therapist. Evidence suggests that effective therapists use the common factors to achieve better outcome. (4) *Therapeutic relationship or alliance* concerns the partnership between the client and therapist to achieve the client' goals. A positive alliance is one of the best predictors of outcome [34]. Contrary to the medical model, the common factors models assume the mechanism of change to be complex, and therefore a particular therapeutic action cannot be solely responsible for the outcome of psychotherapy.

In the present review, the medical model and the common factors model with the four elements presented by Hubble et al. [34] will be used to evaluate and discuss the outcomes, the definitions, and the spiritual or religious factors of the group psychotherapies.

3. Aim

To systematically review the research literature to answer the following questions.

(1) How are spirituality and religiosity defined?

(2) How are spiritual and religious factors characterized and integrated into group psychotherapy?

(3) How is the outcome of the group psychotherapies measured and what are the results?

4. Method

This study was designed as a systematic literature review.

4.1. Search Strategies. In the search process for the literature on spirituality and religion in group psychotherapies, two overall search strategies were used: (1) a combination of "brief" and "building block" search strategies (searching databases) and (2) a "citation pearl growing strategy" (systematic reviewing reference lists for the further relevant literature) [35]. The first author performed the search for the literature, which was concluded in April 2013. Two databases were searched, PsycINFO and PubMed, because a wide range of potentially relevant journals for psychology and healthcare are indexed in these databases. Different "brief" and "building blocks" search strategies were explored in order to obtain as many references as possible and create similar searches in the two databases. The controlled headings in PsycINFO (Index terms) included "Religion," "Religiosity," "Religious Beliefs," and "Spirituality," and a brief search of these four Index terms combined with the Index terms "group psychotherapy" and "Group Intervention" identified 95 references. PubMed's controlled headings (MeSH terms) "Religion," "beliefs, religious," and "spirituality" were combined with the MeSH term "group psychotherapy," and the search identified 221 references. The software program EndNote was used to handle the references. Seven references overlapped, and the total of 309 retrieved references from the database search were examined by titles and abstracts to see if they met the inclusion criteria. Ninety-nine articles were considered eligible for full-text examination, which indicates a relatively

Table 1: Quality assessment checklists.

Qualitative studies	Quantitative studies
(1) Are the aims clearly stated?	(1) Target population: clear inclusion and exclusion criteria?
(2) Is a qualitative methodology appropriate?	(2) Was probability sampling used?
(3) Was the research design appropriate to the research aims?	(3) Did respondents' characteristics match the target population; that is, was the response rate ≥80%?
(4) Was the recruitment strategy appropriate to the research aims?	(4) Were data collection methods standardised?
(5) Were data collected in a way that addressed the research issue?	(5) Was the measure used valid?
(6) Has the researcher-participant relationship been adequately considered?	(6) Was the measure used reliable?
(7) Have ethical issues been considered?	(7) Have ethical issues been considered?
(8) Was the data analysis sufficiently rigorous?	(8) Was the data analysis sufficiently rigorous?
(9) Is there a clear statement of findings?	(9) Is there a clear statement of findings?
(10) How valuable is the research?	(10) How valuable is the research?

Regan et al. [37].

high level of "precision" for the database search [35]. Further, the reference lists of the 99 full-text articles were examined as a part of the "citation pearl growing strategy" [35]. Only three additional articles were found as a part of the "citation pearl growing strategy", which indicated a high level of "recall" [35]. The 102 articles were full-text examined to meet the exclusion criteria for the study.

4.2. Inclusion Criterion. Articles reporting English and Scandinavian language empirical studies on spiritually or religiously integrated psychological group intervention.

4.3. Exclusion Criteria. The exclusion criteria for the review were as follows.

(i) Studies on interventions where the spiritual or religious element is only a minor part of a cultural or social understanding.

(ii) Studies on an integration of specific "spiritual" techniques into intervention (e.g., yoga, meditation, and forgiveness) where the overall intervention is not informed by spiritual or religious considerations.

(iii) Studies where the focus is on a specific type of intervention (e.g., art-based or psychosocial) and the spiritual element is secondary.

(iv) Studies on psychoeducational group interventions.

(v) Studies on couples and family interventions.

(vi) Studies on existential and meaning-centered group interventions that did not specifically include religious or spiritual elements.

4.4. Quality Assessment. In total, 10 articles met the inclusion and exclusion criteria for the review. The first author evaluated the studies based on checklists from standardized assessment tools. The intention of using checklists was to quality assess the methodological rigor of the ten studies by the objective of the type of study presented and to omit methodological vague studies. Qualitative studies ($n = 2$) were subject to quality assessment using the Critical Appraisal Skills Program [36]. Quantitative studies ($n = 8$) were subject to a checklist developed by Regan et al. [37]. See Table 1 for quality assessment checklists.

In the quality assessment three types of evaluation were used: 0 for not reported item, 1 for insufficient reported item (e.g., implied information), and 2 for sufficient reported item (e.g., explicit information). The quality assessment of the papers led to the exclusion of two studies [38, 39]. See Figure 1 for search strategy and exclusions.

4.5. Evaluation of Interventions. In order to evaluate the spiritually or religiously integrated group psychotherapies three specific questions were added to the review process.

(1) How were spirituality or religion defined for the group psychotherapy?

(2) How were spiritual or religious factors integrated into the group psychotherapy?

(3) What was the outcome of the spiritually or religiously integrated group psychotherapy?

The evaluation is presented in Table 2.

5. Findings

The eight articles in the sample were considered methodologically transparent and therefore eligible for the review. There were general weaknesses in all studies, which included a lack of discussions on ethical issues, and most of the quantitative studies only vaguely addressed issues on probability sampling and response rates. However, the remaining eight articles scored high on methods, measures, analysis, findings, and the value of the research. This positively impacts interpretation of their findings. See Table 2 for assessment scores.

In the following sections, after a brief general description of the included studies, we will review the studies in terms of (1) definitions of spirituality and religion, (2) description of the spiritual and religious factors in the studies, and (3) outcome of group therapies.

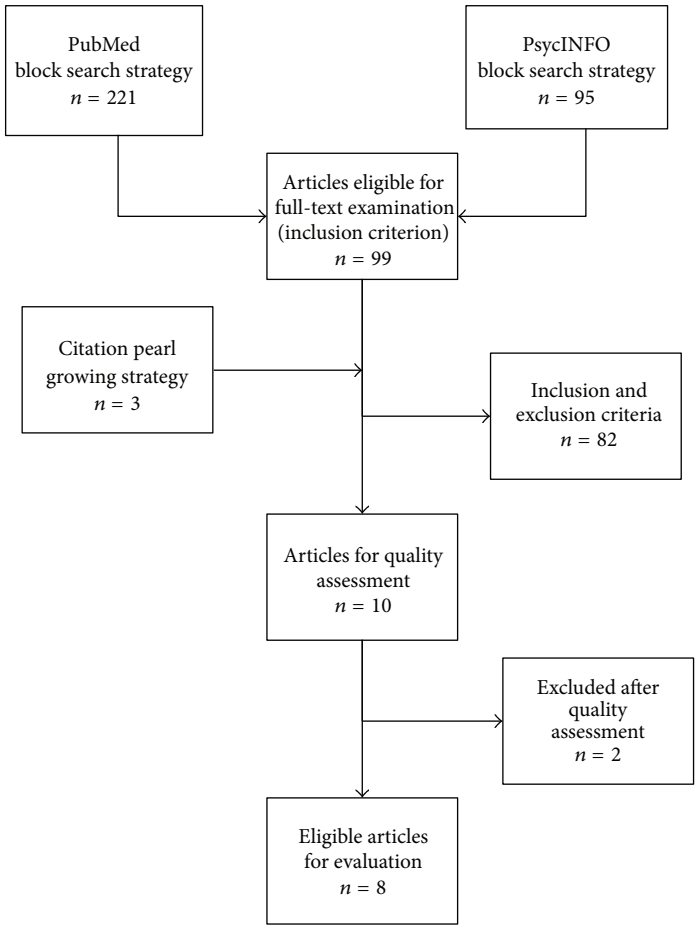

Figure 1: Search strategy and exclusions.

5.1. Description of Group Psychotherapies. Several types of group psychotherapies were presented in the eight studies. The duration of the sessions varied from 45 minutes to two hours. Four of the group psychotherapies presented were time-limited interventions with six to fourteen sessions. Two studies reported on group psychotherapies without limits to numbers of sessions. One study did not report duration or number of sessions [40]. One study reported an intensive treatment model with twelve weeks of daily treatment [41].

Seven of the group psychotherapies were aimed at specific groups of patients: adults with major mental illness [42]; HIV-positive drug users [40]; HIV patients [43]; perfectionism among Mormon college students [44]; Buddhist diabetes patients with depressive symptoms [45]; patients recovering from schizophrenia [46]; women with primary breast cancer [47]. Only Austad and Folleso [41] reported on a group-based treatment for patients, whose religious and existential experiences were an important part of their mental illness.

Three group psychotherapies aimed their interventions at persons with a preceding interest in spirituality or religion: *Vita-prosjektet* [41] was only for people with an outlined interest in religious issues; the Buddhists group therapy [45] only accepted Buddhists; the Mormon perfectionism group [44] were specifically designed for Mormons; the spirituality-oriented group intervention for HIV-positive adults [43] were only for HIV patients with a specific interest in spirituality. The other four group interventions were aimed at specific patient groups, which did not necessarily have a preceding interest in spirituality or religiosity.

5.2. Definitions of Spirituality and Religion. Definitions of spirituality or religion were entirely absent in three of the eight studies [40, 41, 44], and the lack of any conceptualizations caused uncertainty about how spiritual or religious factors were integrated into the group psychotherapies presented.

O'Rourke [42] used the modern approach of defining these two concepts (see Pargament's distinction above). Religion was defined as the individual's religious affiliation or denominational background, whereas spirituality concerned the individual's values, relationships, and perceptions of the sacred; religion was defined as an institutional construct, whereas spirituality was concerned about the individual and her or his sacred experiences. However, the group therapy O'Rourke presented solely addressed spiritual issues. He defined spirituality as a solely individual and personal construct and did not use his definition for religion in the study.

The study by Rungreangkulkij et al. [45] used a traditional approach to defining (see Pargament's distinction above), where religion is the broadband construct, and

Table 2: Evaluations and quality assessment scores.

Authors, year, and country	Study design (n = ?)	Measures	Effect of the group therapy	Type of group therapy	Definitions	Religious/spiritual factors	Quality assessment scores 1	2	3	4	5	6	7	8	9	10
O'Rourke (1996) [42] USA	Qualitative, exploratory design: (n = 12)	Audiotaped and transcribed the therapy sessions.	Addressing spiritual issues in group psychotherapy greatly facilitate an integration of spirituality with all other dimensions of the individual's personality.	Spiritual issues group (psychodynamically oriented) for adults with major mental illness.	*Religion*: the individual's religious affiliation or denominational background. *Spirituality*: the individual's ultimate values, relationship with others, and perception of the sacred which may be expressed within or outside the context of religious tradition.	Creating a spiritual safe place for raising and exploring spiritual issues.	2	2	1	2	1	1	0	2	2	2
Goodman and Manierre (2008) [39] USA	Qualitative						0	0	1	0	1	0	0	1	1	1
Margolin et al. (2005) [40] USA	Quantitative pretest-posttest design: acupuncture treatment and 3-S therapy. (n = 15)	Drug use: urine samples, depression: BDI, anxiety: STAI.	Patients were abstinent significantly longer. Reductions in depression and anxiety.	Spiritual self-schema therapy (cognitive-behavioral and Buddhist) for treatment of HIV-positive drug users.	Spirituality or religion is not defined.	Create, strengthen, and make the "spiritual self-schema" (3-S) more accessible for activation.	2	2	1	2	2	2	0	2	2	2
Richards and Owen (1993) [44] USA	Quantitative, pretest-posttest design. (n = 15)	Depression: BDI, perfectionism: PS, self-esteem: CSE. Religious/spiritual well-being: SWBS.	Participants scored low on depression and perfectionism, and high on self-esteem and existential well-being.	Group counseling (cognitive methods) intervention for self-defeating perfectionism with devout Mormon clients.	Spirituality or religion is not defined.	Address religious beliefs that exacerbate perfectionistic tendencies and make these tendencies more difficult to overcome.	1	0	0	2	2	2	0	2	2	2
Rungreangkulkij et al. (2011) [45] Thailand	Quantitative, pretest-posttest design with matched control group: (n = 32)	Depression: PHQ-9	6-month followup: 65.5% of control group and 100% of Buddhist group returned to normal.	A Buddhist group therapy for diabetes patients with depressive symptoms.	Buddhistic principles: the three universal laws: (1) impermanence, (2) suffering, and (3) selflessness (no self).	Creating insights about cravings and being able to realize the law of impermanence and nonself.	2	2	1	2	2	2	0	2	2	2

Table 2: Continued.

Authors, year, and country	Study design (n = ?)	Measures	Effect of the group therapy	Type of group therapy	Definitions	Religious/spiritual factors	Quality assessment scores 1	2	3	4	5	6	7	8	9	10
Revheim et al. (2010) [46] USA	Quantitative, follow-up design with matched control group. (n = 20)	Spirituality status: SSQ, self-efficacy: SES, quality of life: QOL, hopefulness: HHI.	Group attendees' had significant higher spirituality status and hope than nonattendees.	"The spirituality matters group" for patients with schizophrenia in the recovery process.	*Spirituality*: personal beliefs and values related to the meaning and purpose of life, which may include faith in a higher purpose or power.	Explore nondenominational religious and spiritual themes designed to facilitate comfort and hope.	2	2	1	2	2	2	0	2	2	2
Garlick et al. (2011) [47] USA	Quantitative, pretest-posttest-follow-up design. (n = 24)	Physical well-being: FACT-B, psychological well-being: POMS, posttraumatic growth: PTGI, spiritual well-being: FACIT-Sp-Ex.	Participants improved psychological well-being, physical well-being, spiritual well-being, and posttraumatic growth	A Psychospiritual integrative therapy (PSIT) for women with primary breast cancer.	*Spiritualty*: a variety of practices and beliefs that may or may not stem from a particular denomination. Includes meaning, faith-based, and existential coping components.	Addressing worldviews, life purpose, and life meaning.	2	1	1	2	2	2	1	2	2	2
Austad and Folleso (2003) [41] Norway	Quantitative, pretest-posttest design. (n = 23)	General symptoms: SCL-90, depression: BDI, interpersonal problems: IIP.	The average of the patients' general symptoms went from 1.2 to 0.7. The average for depression went from 19.8 to 8.8.	"Vita-prosjektet" for patients who have religious and existential experiences as an important element in their illness.	Spirituality or religion is not defined.	Address God representations.	1	0	0	1	2	2	0	1	2	2
Tarakeshwar et al. (2005) [43] USA	Quantitative, pretest-posttest design. (n = 13)	Religious beliefs/practices: selected subscales from BMMRS, psychological distress: CES-D.	Patients reported higher self-rated religiosity, less negative spiritual coping, lower depression, and more positive spiritual coping.	A spiritual coping group intervention for HIV patients.	*Spirituality*: relationship with God/higher power, renewed engagement with life, relationship with family.	Reflect on how spirituality helped or hindered coping with HIV.	1	0	0	2	2	2	0	1	2	2
Jimenez (1993) [38] USA	Quantitative						0	0	1	1	1	1	0	0	1	0

spirituality is not explicitly differentiated from religion [24]. Rungreangkulkij defined Buddhism where spirituality was a concurrent and integrated part of the Buddhist religion.

The studies by Revheim et al. [46], Garlick et al. [47], and Tarakeshwar et al. [43] all used modern approaches to defining, and they romanticized spirituality as only positive, personal, and linked to the best in human nature [26]. Spirituality was defined as personal beliefs, practices, and values and these related to meaning, purpose, and renewed engagement with life. Spirituality could also stem from a particular denomination normally associated with religion or faith in a higher purpose or power.

Only the study by Tarakeshwar et al. [43] defined spirituality as possible also being a relationship with God or a higher power, and, as the only study using a modern approach, they understood spirituality as a construct with both positive and negative aspects. The explicit theoretical and empirical foundation for the group intervention was Pargament's concepts of religion and religious coping [15]. Tarakeshwar et al. [43] emphasized that each patient should define their individual spirituality in the first group session. Thereby, spirituality was a solely individual and personal construct. They also emphasized that studies have shown that individuals with HIV are more likely to define themselves as being spiritual rather than religious and they therefore focused on spirituality and omitted religion from the group therapy. This contradicts Pargament's [26] first critique about patients not making the distinction between religion and spirituality, and it is not coherent with the definition and understanding of religious coping presented by Pargament [15].

Summing up: Definitions of spirituality and religion in the eight studies were characterized by a strong emphasis on spirituality whilst religion was mostly omitted. Three studies did not report any conceptualization of spirituality and religion at all. Spirituality was individually defined with broad positive constructs. In the same vein, some studies purposely avoided clear definitions, as they wanted clients to fill the concepts with their own individual meaning.

5.3. The Spiritual and Religious Factors. The purpose of "the spiritual issues group for adults with mental illness" [42] was to offer the clients a safe place to explore their spiritual issues. The spiritual factor in this group therapy would be a spiritual safe place. However, due to the individually and solely positive definition of spirituality for the intervention, a spiritual safe place could be almost everything that felt "good" to the patients within the group therapy. Thereby, the spiritual factor became unclear, and it could be questioned if the group therapy was separated from other types of group psychotherapies without an integration of spirituality.

Margolin et al. [40] presented no definitions for spirituality or religion for the spiritual self-schema therapy. Each individual should create, strengthen, and activate an individually meaningful spiritual self-schema. The spiritual self-schema could be the spiritual factor in this group therapy. However, the spiritual factor became obfuscated because the spiritual self-schema had to be created by the individual for individual meaning. Thereby, the spiritual factor could be anything personal and meaningful taking place in the group therapy, and the outcome of the group therapy may not be directly connected to the spiritual factor.

Richards and Owen [44] had implemented a group intervention developed by King [48] and added a religious-spiritual component. They had not defined spirituality or religion. Despite the lack of definitions, religious imagery and discussions of religious bibliotherapy articles and the relationship between religious beliefs and perfectionism were integrated into the group therapy. However, the spiritual/religious factor of the group therapy was difficult to assess, because the group therapy addressed the Mormons' religious beliefs but without defining those religious beliefs. The intervention was concerned about using the above-mentioned "religious tools" to address religious beliefs that exacerbated perfectionisms. But, because the religious beliefs were undefined, it remained unclear if the "religious tools" addressed them. Furthermore, it was questionable if their self-defeating perfectionism group for Mormons could be separated from other self-defeating perfectionism groups.

Rungreangkulkij et al. [45] defined Buddhism for the therapy as the three universal laws of Buddhism and integrated the definition; they presented a religious definition and created a religious intervention. The purpose of the group therapy was for the participants to live as good Buddhists. The religious factor was easily identifiable because the whole intervention was religious. The entire Buddhist group intervention was the religious factor.

The studies by Revheim et al. [46] and Garlick et al. [47] defined spirituality as a solely positive and personal construct. The foci were primary on a personal sense of meaning. The spiritual factors at work in their group therapies were unclear and difficult to assess. It was unclear if the interventions were "spiritual" or "positive" because spirituality was solely something positive in their definitions. Thereby, the spiritual factors in the group therapies could be anything the patient experiences as positive within the context of the group therapy. This questioned if these group psychotherapies were separated from other types of group psychotherapies without integration of spirituality.

"Vita-prosjektet" presented by Austad and Folleso [41] was based on object-relational theory. The focus was on the patients' God representations and how these influenced the lives and psychic function of the patients. Neither spirituality nor religion was defined for this study. However, the integration of spirituality and religiosity through God representations was theoretically and empirically understood and defined. The spiritual/religious factor in this group therapy was God representations. They presented a clear delimited spiritual/religious factor for the group therapy.

Tarakeshwar et al. [43] presented a detailed description of the content for the spiritual coping group intervention for HIV patients. Positive spiritual coping was the focus of the group therapy, and the patients should reflect on how spirituality helped or hindered coping with HIV. Tarakeshwar et al. focused on spirituality and omitted religion, and they emphasized an individual self-definition for spirituality. However, examining the group intervention the underlying theory became apparent. The theoretical and empirical foundation for the group intervention was Pargament's concepts

of religion and religious coping [15]. Despite the fact that Pargament's theory is on religious coping and Tarakeshwar et al. incorporate their theory into a solely spiritual intervention rooted in clients' self-definitions of spirituality, the purpose of the group therapy was for the participants to increase their positive spiritual coping. The spiritual factor was therefore easily identifiable because the whole group therapy was spiritual.

Summing up, the descriptions of spiritual or religious factors were unclear in five of the studies. The outcome of the group interventions may or may not be directly connected to the spiritual or religious factors at work in the group therapies presented, and it remains unclear whether these group therapies are separated from other types of group therapies without an integration of spirituality or religiosity. Only the studies by Rungreangkulkij et al. [45], Tarakeshwar et al. [43], and Austad and Folleso [41] had integrated spiritual or religious factors in the group interventions that could be expected to be directly related to the outcome of the intervention. Based on the clarity and delimitations of the spiritual/religious factors in these three group therapies, it was possible to distinguish them from other types of group therapies without an integration of spiritual or religious factors.

5.4. Outcome of the Group Therapies. O'Rourke [42] reported on qualitative findings from a spiritual issues group with 12 adults with mental illness. He presented different themes that had emerged from the data. The data of the study suggested that addressing spiritual issues into group psychotherapy facilitated integration of the individual's spirituality with all other dimensions of one's personality. However, O'Rourke's study had the weakness that it did not account for how the researchers'/interpreters' preconceptions influenced the data and findings of the study.

Margolin et al. [40] used a controlled pretest-posttest design to study an eight-week spirituality focused group therapy. Forty HIV-positive drug users received acupuncture treatment and "the last" 15 of them also received "spiritual self-schema therapy". Measurements included depression (BDI), anxiety (STAI), drug urine tests, and general ratings of the effect of acupuncture. Both groups reported reductions in depression (BDI) and anxiety (STAI). The follow-up period was not reported. The spiritual self-schema group reported greater reductions than the "acupuncture only" group, but the intergroup differences were not significant. Urine tests indicated that the spiritual self-schema group was abstinent from heroin and cocaine for significant more weeks than the "acupuncture only" group.

Richards and Owen [44] used a pretest-posttest design, where they completed the outcome measures eight weeks after ending group treatment. Fifteen Mormons received the group intervention for self-defeating perfectionism. Measurements included depression (BDI), perfectionism (PS), self-esteem (CSE), and the religious and existential well-being subscales of SWBS. The participants scored significantly lower on depression (BDI) and perfectionism (PS) and higher on self-esteem (CSE) and existential well-being (subscale of SWBS) at the conclusion of the group. There was no significant increase of religious well-being (subscale of SWBS), which indicated that the effects on depression and perfectionism were not caused by religious well-being. Moreover, the measures included the same or similar items creating self-enforcing, tautological effects.

Rungreangkulkij et al. [45] presented a pretest-posttest design with a matched control group of 32 patients and 32 patients attending a "Buddhist group therapy." The measurement used was change in depression symptoms (PHQ-9). It was administered before intervention and six months after intervention. The continuous PHQ-9 scores (ranging from 0 to 27) indicated that both groups were less depressed: the Buddhist group scored 11.8 (pretest) and 1.0 (posttest) and the control group 11.5 (pretest) and 5.9 (posttest), but no significance tests were made of these intergroup differences. In a subsequent intention to treat analysis, the PHQ-9 were categorized as normal (scores < 7) and depression (≥ 7) and it indicated that participants in the intervention group had a significantly greater opportunity (6.6 times) to turn to normal compared to the control group.

Revheim et al. [46] designed a follow-up study, where they compared group attendees ($n = 20$) with a matched control group ($n = 20$) after ending intervention. Measurements included spiritual status (SSQ), self-efficacy (SES), quality of life (QOL), hopefulness (HHI), and religious/demographic profiles. They found that the group-attendees-spirituality status (SSQ) was significantly correlated with self-efficacy (SES) and hope (HHI), and the group attendees had a significantly higher spiritual status and hopefulness score than nonattendees. However, they used instruments where constructs were measured with same or similar items (e.g., SSQ measuring same or similar items as HHI), which again can create tautological effects, and there was a relatively limited number of significant results considering the extensive use of measurements.

Garlick et al. [47] used a pretest-posttest study design, where they administered measurement instruments in three different time periods: a baseline assessment, postintervention assessment within a week after completion of intervention, and follow-up assessment four weeks later. Instruments were selected to measure quality of life (FACT-B), mood disturbance (POMS), posttraumatic growth (PTGI), and spiritual well-being (FACIT-Sp-Ex). They reported on 24 women with primary breast cancer completing a "psychospiritual integrative therapy" and 20 women completed the follow-up instruments. Participants improved psychological and physical well-being (POMS and FACT-B), spiritual well-being (FACIT-Sp-Ex), and posttraumatic growth (PTGI). Significant effects for time with significant improvements were found between pretest and posttest and between pretest and follow-up. However, the follow-up period was short for determining lasting changes among the participants, and they also administered tautological assessment instruments.

Austad and Folleso [41] used a pretest-posttest design. Measurements included general symptoms (SCL-90), depression (BDI), and interpersonal problems (IIP). The 23 patients completed the intervention, and they all attained a significant reduction in symptoms. The average score for general symptoms (SCL-90) was reduced to 0.7 from 1.2, and the average

score for depression (BDI) was reduced to 8.8 from 19.8. Only two patients fulfilled the criteria for interpersonal problems (IIP) preintervention, but these also displayed a significant positive change. The period between pretest and posttest was not reported.

Tarakeshwar et al. [43] evaluated the effectiveness of a spiritual coping group intervention for 13 adults living with HIV/AIDS using a pretest-posttest design. They administered assessment instruments on religious beliefs and practices (selected subscales of BMMRS), psychological distress (CES-D), and demographic characteristics before intervention and three weeks after intervention. They found that after intervention participants experienced significantly higher religiosity (BMMRS), lower use of negative spiritual coping (BMMRS), and lower depression (CES-D). The participants also experienced more use of positive spiritual coping (BMMRS) but not significantly more. However, the follow-up period was relatively short, and there were a relatively limited number of significant findings relative to the number of variables measured.

All eight studies reported some positive outcomes of the religiously or spiritually integrated group psychotherapies. However, none of the studies used randomized designs, samples were relatively small, the instruments used for measuring outcomes in half of the studies to some degree tautologically measured the same construct, and none of the studies tried to minimize the Hawthorne effect. Despite the reports of positive outcomes, the study designs presented in the eight studies were not robust, and there is no solid evidence for positive or direct outcomes of integrating religious and spiritual factors into group therapy. However, absence of evidence is not evidence of absence and further studies with more robust designs are needed in this undeveloped field of research.

6. Discussion

For some people, spirituality and religion are at the center of their lives, and, for others, spirituality and religion play a minor role in their psychological well-being [3]. The variance and importance of spirituality or religiosity in patients can be expected to influence both the spiritual and/or religious factors at work in the group psychotherapies as well as their outcome. Only the group interventions presented by Austad and Folleso [41], Tarakeshwar et al. [43], Richards and Owen [44], and Rungreangkulkij et al. [45] proposed a group therapy for patients with a specific interest in religion and spirituality. It is surprising that the remaining four studies did not voice any explicit concern for this, as the motivation of the clients before entering psychotherapy is considered an *extratherapeutic factor* which can be crucial to psychotherapy [34].

All eight studies applied the medical model to measure the effect of the total intervention, and none of them addressed the common factors at work. This is likewise surprising, as integration of religion and spirituality into group psychotherapy can be said to be *model or techniques factors* that induce positive expectations and assist the clients' participation in the therapy [34]. Furthermore, the evaluation showed that for most of the studies the spiritual or religious factors integrated into the group therapies could not safely be directly connected to the outcome of the group therapies. If the studies had applied a common factors model instead of the medical model for measuring the outcome of the group therapies, it could have revealed clearer delimitations between these eight spiritually and religiously integrated group psychotherapy and group psychotherapies without integration of spiritual or religious factors.

The outcomes of the eight group therapies remained questionable because the definitions and conscious integration of spiritual or religious factors in the group therapies—for the majority of the studies—were unclearly described and not necessarily connected to the outcome of the studies and also due to their use of weak study designs, limited samples, and tautological assessment tools.

The lack of clear identification of the spiritual and religious factors and their relations to the outcome might suggest that the outcome of the studies were caused by *common factors* [22]. The four elements of common factors presented by Hubble et al. [34], client and extratherapeutic factors, models and techniques, therapist factors, and therapeutic relationship or alliance, could all have been present in all the group therapies, and they could all suffice directly or indirectly in causing the outcome of the studies.

Finally, several of the studies presented modern definitions for spirituality and religion, where spirituality is a solely positive and personal construct [26]. Thereby, spiritual factors became anything the clients might experience positive within the group therapy. For these studies, the spiritual factors were questionable because the concept of spirituality remained unclear.

Considering limitations of the present systematic review, it should be noted that only one researcher (the first author) conducted the literature search, whereas all three authors conducted the complete evaluation. However, the search strategies have been described in detail, ensuring transparency, and the evaluations were standardized and made on the basis of the structured evaluation tools.

7. Conclusion

Clear and delimited conceptualization of spiritual/religious factors is crucial in order to be able to conclude the direct influences of spiritual/religious factors on outcomes. The studies by Rungreangkulkij et al. [45], Tarakeshwar et al. [43], and Austad and Folleso [41] had successfully integrated spiritual/religious factors into group psychotherapy and had delimited the spiritual/religious factors of the group interventions, so these became clear and specific. Despite limitations of study designs and a need for more rigorous study methods, the spiritual/religious factors of these studies were considered directly connected to the outcome of the group psychotherapies. And the spiritually or religiously integrated group psychotherapies presented differentiated from other types of group psychotherapies without spiritual or religious factors. It seemed that romanticizing spirituality, as a solely personal and positive construct, would obfuscate the spiritual factors of the group therapy. However, a complete lack of definitions

for religion and spirituality would only be a problem if the religious and spiritual factors also remained undefined and unclear. Furthermore, these studies had addressed groups of patients with an outlined interest in religious and spiritual issues, and this seemed to call for patients' motivation and common factors, which affected group therapy and outcome positively.

The above evaluation has implications for spiritually or religiously integrated group psychotherapy. Based on this systematic review study, it would seem that clear and delimited conceptualizations of the spiritual or religious factors form the basis for spiritually or religiously integrated group psychotherapy. Furthermore, to aim the spiritually or religiously integrated group psychotherapy at people with specific interests in the spirituality and religiosity seems to increase patients' motivation for therapy.

Furthermore, the evaluation has implications for research on spiritually and religiously integrated group therapy. It is an underresearched area of inquiry, and the articles of the present review can all be said to have used weak study designs. This new area of research thus calls for more studies and for robust randomized study designs. Especially, it would be necessary with studies having a control group that did not have the spiritual factors. This would provide the best comparison and allow one to test for the effects of the spiritual factors. For the area to provide solid evidence of any effect of integrating religion and spirituality into group therapy, a consensus within the field of religion, spirituality, and health about measures for spirituality and religion that are not contaminated with items for mental health is warranted.

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Research Article

Ego and Spiritual Transcendence: Relevance to Psychological Resilience and the Role of Age

Barbara Hanfstingl

School of Education, Alpen-Adria-Universität Klagenfurt, Sterneckstraße 15, 9020 Klagenfurt, Austria

Correspondence should be addressed to Barbara Hanfstingl; barbara.hanfstingl@aau.at

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The paper investigates different approaches of transcendence in the sense of spiritual experience as predictors for general psychological resilience. This issue is based on the theoretical assumption that resilience does play a role for physical health. Furthermore, there is a lack of empirical evidence about the extent to which spirituality does play a role for resilience. As potential predictors for resilience, ego transcendence, spiritual transcendence, and meaning in life were measured in a sample of 265 people. The main result of a multiple regression analysis is that, in the subsample with people below 29 years, only one rather secular scale that is associated with ego transcendence predicts resilience, whereas for the older subsample of 29 years and above, spiritual transcendence gains both a positive (oneness and timelessness) and a negative (spiritual insight) relevance to psychological resilience. On the one hand, these results concur with previous studies that also found age-related differences. On the other hand, it is surprising that the MOS spiritual insight predicts psychological resilience negatively, the effect is increasing with age. One possible explanation concerns wisdom research. Here, an adaptive way of dealing with the age-related loss of control is assumed to be relevant to successful aging.

1. Introduction

In an overview, Seybold and Hill [1] point out that, first, there are many different dimensions which are attributed to religiousness or spirituality. Second, there are both helpful and harmful effects of spirituality, but the influence is largely beneficial. In fact, this is a very general statement about the influence of spirituality. Third, psychological factors such as coping strategies or cognitive processes (e.g., locus of control) may mediate the relationship between spirituality and health. Seybold and Hill explicitly call for an investigation of the role of psychological factors as possible mediators in the religiousness-health connection. On a theoretical basis, psychological resilience is assumed to be a possible mediator between spirituality and health. In the present study the empirical focus lies on the identification of spiritual dimensions as predictors of resilience. Spiritual dimensions here represent especially transcendental experiences.

Since Werner [2] first came into contact with children expressing high psychological resilience, the construct has become an important research area in positive psychology. While earlier theories focused on innate facets of resilience, current approaches concentrate on learnable and environmental factors. Recently, the acquisition of higher resilience has become an aspired goal in psychotherapy (e.g., [3]). It is not yet sufficiently clear to what extent spirituality and transcendental experiences enhance or foster psychological resilience. Thus, the first purpose of this study is to analyze which aspects of transcendence could have a positive or negative influence on general resilience. Different aspects of transcendence, in this study, are approaches with different traditions and understandings of transcendence or spirituality in psychological research. The first approach, related to personality psychology, focuses on the quality of mental information processing and basics of motivational forces [4]. In this paper, this type of transcendence is called ego transcendence [5]. In contrast, the second approach follows more traditional spirituality research that emanates from mysticism research [6–8]. This approach here is labeled spiritual transcendence. A more phenomenological and modern

approximation to spirituality comes from Schnell [9], on the basis of research on contemporary resources of meaning in life.

Up to now, differences between different conceptualizations of spirituality or transcendence in predictive power concerning resilience have not yet been addressed. So, the first main purpose of this study is to explore these different relevancies of spiritual approaches. The second aim is to identify age-related differences in the predictive power of the different approaches. This second research question is important because Büssing and his colleagues [10] reported a meaningful age difference: whereas for older people transcendental beliefs played an important role in life, adolescents tended to focus more on more secular value orientations (see also [11]). In the following, psychological resilience and the three approaches to spirituality or transcendence are described in detail.

1.1. Resilience. Basically, resilience is a broad construct that has no single definition and subsumes different aspects of psychological resistance. Werner and Smith [2] entitled their book Vulnerability Without Invincibility, and wrote about children that were capable of living a successful life in spite of adverse and difficult circumstances. In an overview article, Richardson [12] identified three waves of resilience research. The first wave was characterized through the phenomenological clarification of developmental domains and protective factors. The second wave concentrated on disruptive and reintegrative processes for acquiring resilient qualities, whereas the third wave emphasized a postmodern and multidisciplinary view on resilience. A state-of-the-art view on resilience was presented by Fröhlich-Gildhoff and Rönnau-Böse [13, page 13]. They defined resilience as a "dynamic or compensatory process of positive adaptiveness in the face of inauspicious development and the emergence of load factors." Here, inauspicious development means an ontogenetic development in the face of a high number of psychological risk factors. "Load factor" means the pressure and strain caused by these risk factors. Furthermore, the authors emphasized that resilience is a variable dimension including multidimensional situational factors. Wagnild and Young [14] described resilience as a personality factor that moderates negative emotions and distress and facilitates a flexible adaption to suboptimal conditions.

There is abundant empirical evidence that psychological resilience helps to regain or maintain physical health. For example, Yi et al. [15] demonstrated that people with high resilience scores did not show any association between rising distress and worsening glycosylated hemoglobin, whereas the group with low or moderate resilience showed a strong association. Nygren et al. [16] found that resilience had significant positive correlations with the sense of coherence and self-transcendence as well as with perceived physical and mental health in a sample of very old (85+) people. Leppert et al. [17] identified resilience as a protective personality factor in old people. Taking a look into cancer and palliative research, Strauss et al. [18] showed that higher resilience was accompanied by positive stress management during radiation therapy. Another example of the relevance of psychological resilience was presented by Tugade et al. [19], based on the assumption that resilience is accompanied by positive emotions [20]. They demonstrated that psychologically resilient people rebounded from negative emotional arousal through their experience of positive emotions. Furthermore, their findings showed a clear positive correlation between trait resilience and faster cardiovascular recovery, mediated by positive emotions. The current work aims to concretize the connection between different facets of transcendence and trait resilience, depending on age. In the following, the theoretical rationale of the difference between ego and spiritual transcendence, based on the theoretical assumptions of Kuhl and Fuhrmann [4], is outlined.

Kuhl and Fuhrmann [4, 21] postulated that human personality can be seen as a conglomeration of inner processes of regulative systems. The core of his personality interaction theory (PSI theory) is the assumption that personality comprises two modes of information processing: the "explicit self-regulation system" and the "implicit self-regulation system." These two subsystems have different functions with regard to the mental regulation of a person. The *explicit self-regulation system* is called "ego" and focuses on maintaining the individual's intended goals. It is directed towards the future and comprises the conscious, analyzing part of the mind as well as the so-called "intention memory." Following PSI theory, explicit self-regulation is associated with negative or decreasing positive affect. In contrast to this, the *implicit self-regulation system* according to Kuhl is labeled as "self" and has the function to maintain the self of a person. The "extension memory"—also called implicit memory—is supposed to be an executing part of it. It is responsible for the holistic feeling of the self and comprises memories and "cognitive maps" that represent a person's self-congruent autobiographical content [21, 22]. According to PSI theory, the implicit self-regulation system is activated by positive or decreasing negative affect. As theoretically expected, implicit but not explicit self-regulation plays an important role for job-related intrinsic motivation [23].

1.2. Implicit Self-Regulation as Ego Transcendence. Kuhl distinguished ego, self-, and spiritual transcendence [5]. Figure 1 shows that ego transcendence means the capability to transcend and overcome the barrier between the two functional systems called implicit and explicit self-regulation.

Self-transcendence is assumed to be the transcendence between I and You, in the sense of the capability to get involved with another person, whereas spiritual transcendence refers to the transcendence into a world beyond the spatiotemporal world that surrounds us.

Implicit self-regulation is characterized by parallel and holistic processing of complex conscious and nonconscious self-related information. People with well-developed implicit self-regulative competencies have access to this information, not in a common analytical but more in a feeling-oriented intuitive way. Being in an implicit regulative mode means handling these issues in a way that allows the self to be constructed congruently. According to Kuhl, overcoming the

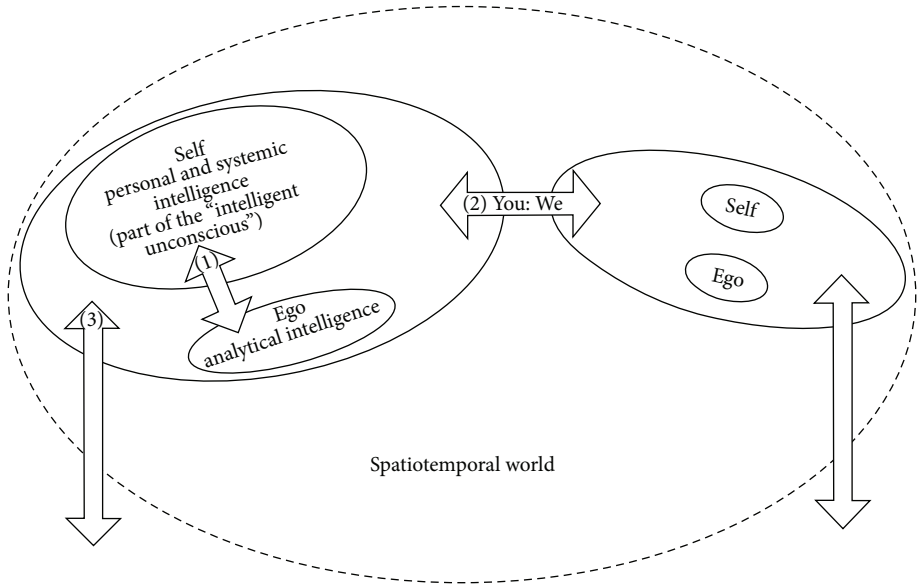

Figure 1: Three kinds of transcendence. (1) Ego transcendence (self: beyond ego), (2) self-transcendence (beyond the self: the other), and (3) spiritual transcendence (beyond space and time). Adapted version based on Kuhl [5, page 23].

barrier between ego and self—therefore ego transcendence—is, for example, switching willfully between an analytical (intention memory) and a holistic (extension memory) information processing. Kuhl and colleagues [4, 24] postulate that implicit self-regulation is closely linked to spirituality. Thus, the people could subjectively experience ego transcendence as a kind of spirituality. In contrast to this, mystical experience is assumed to involve spiritual transcendence and a perception of divinity, as described in the following.

1.3. Mystical Orientation as Spiritual Transcendence. Francis and Louden [8, page 100] mentioned that there is no consistent definition in the literature of what "mysticism-in-general" is. They characterized mysticism "as a sense of union or identity with something other than oneself." In this way, mysticism can be found in many different religious and spiritual systems. Francis and Louden identified mysticism as the core of all religions. On the basis of this definition, spiritual transcendence is well discriminable from ego transcendence as described above.

1.4. New Structure of MOS. In order to measure aspects of mysticism, Francis and Louden developed their Mystical Orientation Scale (MOS) based on Happold's seven aspects of mysticism [6]: ineffability, noesis, transiency, passivity, oneness, timelessness, and true ego. As an aside, the first four aspects were also mentioned by James [7] in regard to mysticism. Francis and Louden constructed three items for each facet, so the MOS comprises 21 items. The original MOS is conceptualized as a one-dimensional scale, and it has been validated on a sample of 3581 Catholic priests. However, for samples of laypeople, mysticism would be overdifferentiated if it is compartmentalized into seven aspects. This assumption is supported by a test-statistical analysis of the seven original MOS: only a few of the seven scales reached satisfying internal consistencies [25, page 22]. Schnell and Hanfstingl [26] translated the original items into German and had them translated back into English by a native speaker. In a further step, Hanfstingl and Römer [25] conducted a validation study with a sample of religious and spiritual laypeople. In a principal component analysis with varimax rotation, they identified three components of mysticism: oneness and timelessness, (perception of) good power, and spiritual insight. These factors are actually close to the original aspects of mysticism postulated by James and Happold. *Oneness and timelessness* factor reflects the two dimensions already described by Happold, but the factor also contains aspects of true ego. It describes a kind of mysticism that is characterized by feeling unified with all existing world and time, with the past and future. Thus, spirituality here means a feeling of being merged with the whole world and time. *Good power* emphasizes the feeling that one is positively influenced by a power outside of one's control, which may be reflected, for example, in aspects of passivity. Both the scales oneness and timelessness and good power reflect a kind of spirituality that involves a positively perceived tolerance of being controlled externally. *Spiritual insight* includes aspects of noesis as well as ineffability and transiency. In contrast to the other two MOS, it comprises items which emphasize retaining personal control in situations, feelings, or qualities that contain a deep truth or an insight in a higher plane. It characterizes a person who "stays human" in realizing spiritual experience, retaining control over the experience.

To conclude, it makes sense not to conceive of mysticism as unidimensional, although the internal consistency of the German MOS as a whole is very satisfactory with $\alpha = .93$. Furthermore, the three scales oneness and timelessness, good

power, and spiritual insight provide a good description of discriminable facets of mysticism that seem to have differential relevance to spiritual laypeople. Next, an additional aspect of spirituality and/or spiritual experience is described that is assumed to have relevance to resilience.

1.5. Meaning in Life. Schnell highlighted the importance of the meaning in life as a substantial component of well-being [9]. In line with Frankl [27], she emphasized the relevance of meaning in life for living a fulfilled life. Schnell and Becker [28] found that the most important predictor of meaningfulness is self-transcendence, but they did not define self-transcendence in the sense of Kuhl [5]. In the study by Schnell and Becker, vertical self-transcendence consisted of explicit religiosity and spirituality, whereas horizontal self-transcendence comprised unison with nature, social commitment, generativity, care for others, and health [29]. In the following, having meaning in life in the study was assumed to positively influence resilience, for which meaning in life and crisis of meaning were measured.

To summarize, Seybold and Hill postulated theoretically that psychological variables mediate the connection between spirituality and physical health [1]. At the same time, they mentioned a lack of knowledge about which psychological factors come into question to act as mediators. As there is empirical evidence that psychological resilience plays a significant role when people accomplish and maintain physical health, we assume that psychological resilience could be a mediator between different aspects of transcendental experiences and physical health. In the present study, the empirical focus is on the identification of spiritual predictors of psychological resilience. All in all, the present study addresses two research questions. The first aim is to investigate which aspects of spirituality may have a positive effect on psychological resilience. Specifically, three aspects of spirituality are measured: implicit self-regulation, mysticism, and meaning in life. Second, based on Büssing et al.'s findings [10, 11] age-related differences in the predictive power of the spiritual approaches will be investigated.

2. Materials and Methods

The study was conducted as a questionnaire survey. The questionnaires were mostly presented online; only a few were administered face-to-face. One part of the data collection was conducted as part of an summative evaluation at the end of an Austrian nationwide teacher training program. Second, people working at different hierarchical levels of an Austrian province government participated, mostly filling out the questionnaires in the paper-pencil version. Finally, staff and students of three Austrian universities were asked by email to participate in the online survey. Additionally, participants were asked to forward the link with the questionnaire to interested friends. Altogether, $N = 265$ people aged from 18 to 71 (mean = 33.4; Md = 29; SD = 12.2) participated, 192 (72.5%) females and 72 (27.2%) males. The sample was relatively highly educated: 133 (50.2%) had gained a higher-education entry qualification, and 119 (44.9%) had graduated from university, whereas only 11 (4.1%) had completed compulsory education and/or an apprenticeship and 4 (1.5%) had only completed compulsory education. Concerning employment status, 32 (12.1%) were university students (11 worked alongside their studies), 27 (10.2%) worked at the university, 43 (16.2%) were teachers, 54 (20.4%) worked in the civil service, and 70 (26.4%) were in private business.

The questionnaire included three measures of spirituality, the Volitional Component Inventory (VCI), the Sources of Meaning and Meaningfulness Questionnaire (SoMe) and the Mystical Orientation Scale (MOS), and one outcome measure, the Resilience Scale (RS). All scales were constructed by calculating the mean of the particular items.

2.1. Volitional Component Inventory (VCI) [4]. The VCI (German version: [22]) is based on Fröhlich and Kuhl's conception of self-regulation and measures different functional components that are differentiated into implicit and explicit self-regulation aspects. In this study, only implicit self-regulation is of interest, and the items are not original due to copyright issues, but they should help in having a better idea about the measured constructs. Implicit self-regulation includes the scales self-determination (Cronbach's $\alpha = .79$; e.g., "almost everything I do, I do by choice."), positive self-motivation (Cronbach's $\alpha = .81$; e.g., "if I have to do some work, generally I can start with it immediately."), self-calming (Cronbach's $\alpha = .83$; e.g., "I can calm down when I feel effusively nervous."), action oriented failure management (Cronbach's $\alpha = .84$; e.g., "after a flop I can pick up courage very fast."), and self-perception (Cronbach's $\alpha = .80$; e.g., "under pressure, I do not lose the access to my feelings."). All VCI scales consist of four items.

2.2. Sources of Meaning and Meaningfulness Questionnaire (SoMe) [28]. The SoMe, based on Schnell's theory of meaning in life, assesses 26 sources of meaning. It includes four dimensions (which are further divided into subscales): self-transcendence, self-actualization, order, and well-being and communality. In the present study, two scales were used that run across these dimensions: meaning in life (e.g., "I do have a life-task," no original item) and crisis of meaning (e.g., "my life is useless," no original item). Each of the two scales consists of five items and achieved good internal consistency: Cronbach's α was .79 for meaning in life and .91 for crisis of meaning.

2.3. Mystical Orientation Scale (MOS) [8, 25]. As described above, the MOS was translated from English to German by Schnell and Hanfstingl [26]. Empirically, three facets of mysticism were identified that are assumed to have differential relevance to laypeople [26]. The three scales had good internal consistencies in the present study: Cronbach's α was .90 for oneness and timelessness (e.g., "feeling myself at one with the universe," no original item; the scale includes nine items), .83 for good power (e.g., "feeling moved by an ineffable force," no original item; the scale includes five items), and .81 for spiritual insight (e.g., "having insights which I cannot put into words," no original item; the scale includes seven items).

2.4. Resilience Scale (RS) [30]. The Resilience Scale was developed by Wagnild and Young [14], who proposed a two-dimensional approach to resilience, personal competence, and acceptance of the self. Wagnild and Young defined resilience as a personality factor that plays a moderating role for negative emotions and stress that helps to adapt flexibly to difficult situations. They validated their model of resilience in an empirical study [14]. Schumacher and colleagues [31] developed and validated a German version of the RS containing the two dimensions personal competence and acceptance of the self. In the present study, a new validated version of RS (RS-13) [30] was used and resilience was conceptualized one-dimensionally. The RS-13 consists of 13 items (e.g., "I have enough energy to do what I have to do," no original item) and shows a very good internal consistency with Cronbach $\alpha = .93$.

3. Results

3.1. Intercorrelations. Table 1 displays the bivariate correlations among the investigated variables. As expected, the two SoMe scales and all five VCI scales show moderate to strong correlations (|.42| to |.58|) to resilience. Quite unexpected, however, is the result that the three MOS have zero correlations to resilience. In order to exclude any nonlinear relationship between the MOS and resilience (e.g., a u-shaped link), the relational distribution plots of the two variables were examined, but no relevant nonlinearities were found.

However, all three MOS did show significant positive relationships among themselves and to the SoMe scale meaning in life. The fact that the in-between correlations of the MOS were not higher than about .65 justifies the separation into three individual dimensions. Furthermore, the three MOS showed significant negative (although low, <|.29|) correlations to action oriented failure management and self-perception. This supports the assumption of a highly differentiated dimensional structure of the measures of spirituality and transcendencies.

3.2. Predicting Resilience from Measures of Spirituality. In order to investigate which dimensions of spirituality play a significant predictive role for psychological resilience, a multiple regression analysis was performed. A multiple regression design is able to identify collinearities; that is, two or more spirituality scales predict the same variance of psychological resilience. Additionally, variables which do not play a role in a bivariate correlational design may play a significant role within a pool of possible predictors. Thus, all spirituality variables were expected to predict resilience: meaning in life and crisis of meaning in the SoMe, self-determination, positive self-motivation, self-calming, action oriented failure management, self-perception of the VCI, and the three scales of the MOS, oneness and timelessness, good power, and spiritual insight.

In the whole sample, the ten predictors explained slightly below 50% of the variance in resilience (corrected $R^2 = .47$). As shown in Table 2, only three scales were significant predictors of resilience: crisis of meaning (negative predictor), self-determination, and positive self-motivation. As on the bivariate level (Table 1), the three MOS did not play a significant role for the target variable. In the following, the analysis was performed separately in two age groups. The young group aged from 18 to 29 ($N = 137$), and the older group ($N = 124$) aged from 29 to 71. The age of 30 was chosen as the split criterion for theoretical reasons. In many personality developmental theories the age of 30 is relevant for a life-span perspective on human development. From a sociocultural view, a prolonged adolescence should be completed finally at the age of 30. People from 30 onwards are often about to become parents themselves, their professional career courses are largely set, and their own parents may be growing old and may need more support. Personality psychology has found that personality is much more stable and different in quality from the age of 30 onwards than before (e.g., [32, 33]).

3.3. Predictors of Resilience: Young Group. Table 3 shows the results for the young group. The explained variance in the target variable is lower than that in the whole sample at about 40% (corrected $R^2 = .42$).

In the young group, only one variable is a significant predictor of psychological resilience: self-determination with a beta of .31. Self-determination is meant as a highly secular aspect of ego transcendence. All other spirituality scales do not have any predictive influence on psychological resilience.

3.4. Predictors of Resilience—Older People. In the older sample, several dimensions of spirituality predicted resilience. In the older sample, the ten variables explained 57% of the variance in resilience.

As Table 4 shows, positive self-motivation, self-perception, and the two MOS oneness and timelessness as well as spiritual insight were significant predictors of resilience. While the first three scales had a positive influence on psychological resilience, the MOS spiritual insight was a significant negative predictor (beta = −.25).

In fact, the relationship between the MOS and resilience becomes even stronger when the regression analysis is calculated only for participants aged 40 and older ($N = 69$). The negative path between spiritual insight and resilience grows to $-.48^{**}$; oneness and timelessness (beta $= .34^{*}$) and positive self-motivation (beta $= .50^{**}$) are still positive predictors, whereas good power becomes insignificant (beta = .15).

4. Discussion

This study investigated the relationships of scales measuring different conceptions of spirituality to resilience in a sample of adults aged between 18 and 71. In the total sample, psychological resilience had significant connections to all meaning-of-life and internal-regulation scales but not to measures of mystical spirituality. Also, correlations revealed that one VCI scale action oriented failure management is also most of all negatively correlated with the MOS. Action oriented failure

Table 1: Intercorrelations of the SoMe scale, VCI scale, and MOS with psychological resilience. $N = 265$.

		SoMe		VCI				MOS		
	Resilience	Meaning in life	Crisis of meaning	Self-determination	Pos. self-motivation	Self-calming	Action oriented failure management	Self-perception	Oneness and timelessness	Good power
SoMe										
Meaning in life	**.44****									
Crisis of meaning	**−.50****	**−.57****								
VCI										
Self-determination	**.54****	**.41****	**−.47****							
Pos. self-motivation	**.58****	**.37****	**−.39****	**.53****						
Self-calming	**.47****	**.30****	**−.35****	**.47****	**.63****					
Failure management	**.42****	**.19****	**−.35****	**.41****	**.43****	**.52****				
Self-perception	**.45****	**.23****	**−.44****	**.44****	**.38****	**.44****	**.60****			
MOS										
Oneness and timelessness	.01	**.32****	.00	.02	−.09	**−.17****	**−.19****	*−.16**		
Good power	.00	**.32****	.00	.02	.00	−.12	**−.18****	**−.18****	**.67****	
Spiritual insight	.05	**.33****	−.02	.01	.02	−.06	**−.16****	*−.13**	**.63****	**.64****

**Correlations are significant at the level of .01 (two-tailed).
*Correlations are significant at the level of .05 (two-tailed).

Table 2: Multiple regression analysis. Dependent variable: resilience. Whole sample, $N = 265$. Significant predictors are bold.

Model	Coefficients			T	Significance
	Nonstandardized coefficients		Standardized coefficients		
	Regression-coefficient B	Standard error	Beta		
Constant	2.368	.388		6.103	.000
Meaning in life	.112	.060	.120	1.865	.063
Crisis of meaning	**−.149**	**.063**	**−.148**	**−2.385**	**.018**
Self-determination	**.283**	**.099**	**.169**	**2.854**	**.005**
Pos. self-motivation	**.450**	**.093**	**.303**	**4.817**	**.000**
Self-calming	.047	.090	.033	.523	.601
Action oriented failure management	.076	.076	.061	.996	.320
Self-perception	.153	.078	.119	1.955	.052
Oneness and timelessness	.039	.060	.043	.643	.521
Good power	−.040	.062	−.042	−.639	.523
Spiritual insight	.033	.069	.030	.475	.635

Table 3: Multiple regression analysis. Dependent variable: resilience. Young sample, $N = 137$. Significant predictors are bold.

Model	Coefficients			T	Significance
	Nonstandardized coefficients		Standardized coefficients		
	Regression-coefficient B	Standard error	Beta		
Constant	2.256	.581		3.886	.000
Meaning in life	.084	.098	.083	.854	.395
Crisis of meaning	−.151	.087	−.160	−1.737	.085
Self-determination	**.517**	**.153**	**.313**	**3.370**	**.001**
Pos. self-motivation	.187	.141	.125	1.326	.187
Self-calming	.127	.135	.085	.940	.349
Action oriented failure management	.053	.111	.041	.480	.632
Self-perception	.118	.107	.097	1.102	.273
Oneness and timelessness	−.011	.069	−.011	−.133	.910
Good power	−.086	.097	−.091	−.877	.382
Spiritual insight	.147	.102	.125	1.445	.151

management focuses on action oriented (in contrast to state oriented) dealing with failure, whereas spiritual insight and also the other two MOS are characterized by holding and not acting. Insofar, the negative correlation between the MOS and action oriented failure management makes sense.

In a multiple regression analysis, only three variables remained significant predictors of psychological resilience: crisis of meaning, self-determination, and positive self-motivation. Meaning in life, self-calming, action oriented failure management, self-perception, and the three MOS do not show significant predictors. However, if the sample is divided into a younger and an older half at a cutoff age of 30 years, the predictors gain different relevance to psychological resilience. In the young sample only one rather secular predictor remains significant: self-determination. This result is consistent with the findings of Büssing [11]. In the older sample, the most powerful predictor is positive self-motivation, a measure of implicit self-regulation. In addition, two of the three MOS—oneness and good power—are significant positive predictors of resilience, while spiritual insight is a negative predictor. Moreover, taking people with age 40 and older as sample, the effect is even stronger. In this case, we probably have to speak about an age-related phenomenon.

A possible explanation for the result of negative prediction could be provided by psychological wisdom research and life-span developmental psychology [34]. In aging research it is a well-known phenomenon that an adaptive way of dealing with control and uncertainty is a relevant factor for well-being when people grow old. Here, being adaptive means that people have to deal with the fact that, on the one hand, many things in life stay uncontrollable and uncertain in the end, such as, for example, the loss of a job, prosperity, or an important friendship, or the death of close friends children, or spouses. For example, the Berlin wisdom paradigm [35] emphasizes the capability to recognize and manage uncertainty as one of the five criteria which are conditional for successful aging and wisdom. On the other hand, successful aging is closely linked to the acceptance of losing skills and competencies which are standard for younger people, for example, loss of physical healthiness or retardation of the ability for regeneration, (short-term) memory, concentration, or, in general, fluid intelligence. The dynamic between keeping or giving up control could be a

Table 4: Multiple regression analysis. Dependent variable: resilience. Older sample, $N = 124$. Significant predictors are bold.

Model	Coefficients			T	Significance
	Nonstandardized coefficients		Standardized coefficients		
	Regression-coefficient B	Standard error	Beta		
Constant	2.318	.481		4.824	.000
Meaning in life	.111	.071	.129	1.564	.121
Crisis of meaning	−.154	.091	−.130	−1.706	.091
Self-determination	.016	.124	.009	.126	.900
Pos. self-motivation	**.889**	**.124**	**.577**	**7.195**	**.000**
Self-calming	−.065	.111	−.049	−.587	.558
Action oriented failure management	.015	.099	.013	.149	.882
Self-perception	**.293**	**.111**	**.210**	**2.627**	**.010**
Oneness and timelessness	**.169**	**.072**	**.210**	**2.338**	**.021**
Good power	.076	.076	.083	.993	.323
Spiritual insight	**−.240**	**.093**	**−.251**	**−2.587**	**.011**

possible explanation of the different relevancies of the MOS for psychological resilience. As mentioned above, spiritual insight is the only MOS scale that is characterized by keeping control when experiencing spirituality, whereas the other two MOS oneness and timelessness and good power address a positively connoted giving up of control. Perhaps striving for control in situations that cannot be controlled becomes an obstacle to resilience especially when people grow older or are faced with multiple stressors.

All in all, identifying the role of control and the loss of control in spiritual research could help concretize Seybold and Hill's [1] call for a better understanding of helpful and harmful effects of religion and spirituality on physical health via the pathway of psychological resilience.

5. Conclusions

This study presented empirical evidence that different aspects of spirituality play a role for psychological resilience in different life phases. In line with Büssing et al. [10, 11] for younger people secular aspects play a more strengthening role for psychological resilience than for older people. A surprising result is that, for people from the age of 30 and onwards, spiritual insight predicts psychological resilience negatively; the older people are, the stronger the effect becomes.

Following Kuhl [5] and the present results, it makes a difference for our psychological resilience whether we experience ego, self-, or spiritual transcendence. In this study, spiritual transcendence played a (positive or negative) role for psychological resilience only in people above the age of 29. Further research needs to investigate the extent to which cognitive development (e.g., increasing ambiguity tolerance) and the role of the experience of control are associated with the individual relevance of spirituality.

6. Limitations and Outlook

Due to the exploratory character of the research design, more research questions were raised than answered. For example, more precise theories that specify and test mediation models predicting health from spirituality with resilience as a mediator have to be developed and tested. Currently, we know that psychological resilience has a positive effect on physical health and that some dimensions of spirituality have this effect, too. The present study could not test such mediation models because physical health was not measured. In order to investigate the processes and mechanisms between spirituality, psychological resilience, and physical health more precisely, further research projects should consider longitudinal studies focusing on different dimensions of spirituality as well as spiritual development and physical health. The current results show us that there is variation in the influence of spirituality on psychological resilience by age. Therefore and against the background of the highly subjective and individual significance of spirituality, further research should include qualitative research exploring different qualities of transcendence. A further critical point of the study is that the respondents were highly educated and their health status was unknown. The results might be more differentiated with a database considering various health affections and different socioeconomic statuses.

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Research Article

Spiritual Needs of Elderly Living in Residential/Nursing Homes

Nora-Beata Erichsen[1] and Arndt Büssing[1,2]

[1] *Quality of Life, Spirituality and Coping, Institute of Integrative Medicine, Witten/Herdecke University, 58313 Herdecke, Germany*
[2] *Freiburg Institute for Advanced Studies (FRIAS), Universität Freiburg, 79104 Freiburg, Germany*

Correspondence should be addressed to Arndt Büssing; arndt.buessing@uni-wh.de

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While the research on spiritual needs of patients with chronic and life-threatening diseases increases, there is limited knowledge about psychosocial and spiritual needs of elderly living in residential/nursing homes. We were interested in which needs were of relevance at all, and how these needs are related to life satisfaction and mood states. For that purpose we enrolled 100 elderly living in residential/nursing homes (mean age 84 ± 7 years, 82% women) and provided standardized questionnaires, that is, Spiritual Needs Questionnaire (SpNQ), Brief Multidimensional Life Satisfaction Scale (BMLSS), Quality of Life in Elders with Multimorbidity (FLQM) questionnaire, and a mood states scale (ASTS). Religious needs and Existential needs were of low relevance, while inner peace needs were of some and needs for giving/generativity of highest relevance. Regression analyses revealed that the specific needs were predicted best by religious trust and mood states, particularly tiredness. However, life satisfaction and quality of life were not among the significant predictors. Most had the intention to connect with those who will remember them, although they fear that there is limited interest in their concerns. It remains an open issue how these unmet needs can be adequately supported.

1. Introduction

In societies with an increasing number of elderly which are not able to care for themselves any longer and thus decide—or others may have decided for them—to live in protected housing estates (i.e., residential homes, assisted accommodation, or residential nursing homes), there is a need to care not only for their physical health but also for their psychosocial aspects. Very old individuals living alone are often depressed; the risk factors include living in distance from family and low satisfaction with living accommodation and finances [1]. However, individuals may experience depression also in nursing homes; the risk factors involve physical affections and limitations, loneliness and lack of social support, and so forth [2]. Golden et al. [3] clearly showed that loneliness and social networks have an independent influence on mood and well-being of community-dwelling elderly. In their study enrolling 1,299 elderly, 35% described themselves as lonely and 34% had a nonintegrated social network; nevertheless, also 32% of participants with an integrated social network reported being lonely [3]. There is an obviously complex network of influencing variables which all point to the fact that older individuals require psychosocial support which is not available to their satisfaction.

A study from the late 80th stated that "older persons have significant needs that cannot be met by psychotherapy, social work, or other disciplines," particularly because these elderly "often feel useless and without dignity" on the one hand and have to struggle with "thoughts of dying" on the other hand [4]. A small pilot enrolling ten patients from a care of the elderly assessment unit found that elderly patients stated needs "related to religion, meaning, love and belonging, morality, and death and dying" [5].

Such needs indicate a gap between specific expectations and the situation as it is, or, in other words, "if the individual resources to deal with the challenges (⋯) are insufficient to restore well-being, patients may express specific needs" [6]. With respect to patients' unmet needs, patients may expect that the fulfillment of their spiritual needs can have a positive influence on their quality of life and life satisfaction. Of course expectations can be higher as they can be fulfilled, and the respective needs remain idealistic intentions, yet this will

not argue against the fact that individuals may express such needs because they regard them as important for their current situation [6, 7].

Spiritual needs do not necessarily refer to religious issues only, and they are not exclusively existential, too. From a theoretical point of view it is appropriate to differentiate psychosocial, existential and religious needs, yet, it is not practicable to separate these interconnected needs in a clinical context. Moreover, a specific need may have a religious connotation for one individual, and may have a clear existential connotation for an a-religious person. Moreover, the interpretation whether or not a specific need is a "spiritual" one depends on the individual attitudes and convictions, the underlying world view and the specific cultural context.

Our recent framework of spiritual needs for research and clinical practice thus distinguishes between four interconnected core dimensions of spiritual needs [8], that is, Connection, Peace, Meaning/Purpose, and Transcendence, and correspond to the underlying categories social, emotional, existential, and religious. These dimensions can be related to Alderfer's ERG model [9] which includes the needs categories Existence (i.e., physiological and safety needs), Relatedness (i.e., belongingness and external esteem needs), and Growth (i.e., self-actualization and internal esteem needs) (see [9]). According to the ERG model, specific needs may have stronger relevance particularly when other needs cannot be fulfilled. For example, when needs for self-actualization and internal esteem cannot be fulfilled under a given situation, then relational needs (i.e. family, friends, and religious sources) would become more important.

However, most of the studies addressing spiritual needs refer to chronic patients' needs [6–20], and these patients are in most cases of higher age. Yet, the spiritual needs of patients with chronic and fatal diseases might be different from the needs of elderly which experience a decrease of their physical and mental abilities and an increasing social isolation, but must not necessarily be ill. So far research has verified that patients with life-threatening and/or chronic diseases regard their spirituality as a beneficial resource to cope [21–28], and thus acknowledging and supporting their spirituality are a main issue of spiritual care. But what about elderly which must not necessarily suffer from chronic illness but from increasing physical, mental and social restrictions? Do they have specific unmet spiritual needs?

The aim of this study was thus to analyze which psychosocial and spiritual needs were reported by elderly living in residential/nursing homes, and how these needs are connected with life satisfaction and mood states. We included also related variables such as perceived daily life impairment and self care abilities on the one hand, and religious trust on the other hand.

2. Materials and Methods

2.1. Individuals. All individuals of this anonym cross-sectional study were informed about the purpose of the study, were assured of confidentiality, and consented to participate. One-hundred elderly living in 12 different residential/nursing homes for elderly and assisted accommodation homes from Schleswig-Holstein (northern parts of Germany, predominantly with a Protestant denomination were enrolled. The respective institutions were chosen because of their willingness to participate and convenient accessibility.

Inclusion criteria were age at least 65 years and written consent to participate; exclusion criteria were acute and significant health affections, and acute psychiatric disease which would impair the validity of obtained answers. We also did not include elderly with significant dementia.

When possible, nursing staff was consulted to advise which individuals might be suited to participate. Due to the fact that most of the interviewed persons had problems with reading and writing, the interviewer red the respective items to them and assisted filling the respective answers. During this process, all comments which would help to interpret the data were recorded.

Most of the contacted individuals showed interest to participate. Although some of these volunteers were first skeptically reserved because they had to talk about private concerns, they responded nevertheless willingly during the interviews. We strictly followed the commitment of voluntariness, and thus none of the residents was coerced to participate. Only 20 persons were not willing to participate.

2.2. Measures

2.2.1. Psychosocial and Spiritual Needs. To measure psychosocial and spiritual needs, we used the Spiritual Needs Questionnaire (SpNQ) [7, 17]. This instrument can be used as a diagnostic instrument with 29 items and also as a validated measure of spiritual needs relying on 19 items [7]. The instrument differentiates 4 main factors, that is,

(1) *religious needs* (Cronbach's alpha = .92), that is, praying for and with others, and, by themselves, participate at a religious ceremony, reading of spiritual/religious books, and turn to a higher presence (i.e., God, angels);

(2) *existential needs* (reflection/meaning) (alpha = .82), that is, reflect previous life, talk with someone about meaning in life/suffering, dissolve open aspects in life, talk about the possibility of a life after death, and so forth;

(3) need for *inner peace* (alpha = .82), that is, wish to dwell at places of quietness and peace, plunge into the beauty of nature, finding inner peace, talking with other about fears and worries, and devotion by others;

(4) need for *giving/generativity* (alpha = .74) which addresses the active and autonomous intention to solace someone, to pass own life experiences to others, and to be assured that life was meaningful and of value.

For this analysis, we used three additional items asking for the need to be "more involved by the family in their life concerns," to be "invited (again) to private meetings with friends," and to "receive more support from the family."

All items were scored with respect to the self-ascribed importance on a 4-point scale from disagreement to agreement (0—not at all; 1—somewhat; 2—very; and 3—extremely).

2.2.2. Religious Trust. To analyze religious trust, which should be associated with *religious needs* but not necessarily with the other needs, we used the respective 5-item subscale of the SpREUK questionnaire (SpREUK is an acronym of the German translation of "Spiritual and Religious Attitudes in Dealing with Illness") [29, 30]. The scale avoids exclusive terms such as God, Jesus, or church in order not to exclude any and thus is suited particularly to secular societies. The Trust scale (alpha = .91), or trust in higher guidance/source, is a measure of intrinsic religiosity and deals with trust in spiritual guidance in life, the feeling to be connected with a higher source, trust in a higher power which carries through whatever may happen, and conviction that death is not an end, and so forth.

The scale scores items on a 5-point scale from disagreement to agreement (0, does not apply at all; 1, does not truly apply; 2, do not know (neither yes nor no); 3, applies quite a bit; and 4, applies very much). For all analyses, we used the mean score which was referred to a 100% level (transformed scale score). Scores >50% indicate higher agreement (high Trust), while scores <50% indicate disagreement (low Trust).

2.2.3. Life Satisfaction. Life satisfaction was measured using the Brief Multidimensional Life Satisfaction Scale (BMLSS; alpha = .87) [31]. The items address intrinsic (myself, life in general), social (friendships, family life), external (work situation, where I live), prospective dimensions (financial situation, future prospects) of life satisfaction, and also satisfaction with the abilities to manage daily life concerns and satisfaction with the health situation. In this study, we did not measure satisfaction with work situation.

Each of these 9 items was introduced by the phrase "I would describe my level of satisfaction as ..." and scored on a 7-point scale ranging from dissatisfaction to satisfaction (0—terrible; 1—unhappy; 2—mostly dissatisfied; 3—mixed (about equally satisfied and dissatisfied); 4—mostly satisfied; 5—pleased; and 6—delighted). The BMLSS sum scores were referred to a 100% level ("delighted"). Scores >50% indicate higher life satisfaction, while scores <50% indicate dissatisfaction.

2.2.4. Quality of Life in Elders with Multimorbidity. While the BMLSS measures satisfaction with defined aspects of life satisfaction, the FLQM (FLQM, acronym of the German translation "quality of life in elders with multimorbidity") focuses on self-ascribed domains of utmost individual importance [32, 33]. Participants were invited to designate five to seven domains which are important to provide meaning, satisfaction, and well-being in their life. Then each of these dimensions is scored on a 6-point scale to assess both satisfaction (1 = there is hardly anything to improve; 2 = very satisfied; 3 = satisfied; 4 = rather unsatisfied; 5 = very unsatisfied; and 6 = it could hardly be worse) and relative importance (1 = among the most important things in my life; 2 = very important; 3 = important; 4 = somewhat important; 5 = rather unimportant; and 6 = not important compared to the other domains). For final overall scoring, both scores were inversely recoded to indicate favorable outcome by higher values. A global life satisfaction sum score (FLQM Index) is calculated (domain-specific satisfaction $*$ domain-specific weight), corrected by the individual sum of domain-specific weights. Lower scores indicate lower life satisfaction/quality of life (theoretical range 1–6).

2.2.5. Mood States. To assess mood states which are related to life satisfaction and subjective quality of life, we relied on the ASTS scale ("Aktuelle Stimmungslage") of Dalbert [34] which refers to the Profile of Mood States (POMS) [35]. It measures the state component of subjective well-being and differentiates five mood states, that is, positive mood (6 items), sorrow (3 items), despair (3 items), and tiredness (4 items). The internal consistency of the factors ranges from alpha = .83 to .94. The scale has a 7-point rating scale ranging from 0 (not at all) to 7 (very strong). Dalbert [34] has provided evidence for the external validity of the ASTS. Currently there are no norm values for the respective scales.

2.2.6. Self-Perceived Daily Life Affections. Self-perceived impairment of daily life (i.e., affected by pain, ability to walk, illness, etc.) was measured with a visual analogue scale (VAS) ranging from 0 (none) to 100 (unbearable).

2.3. Statistics. Descriptive statistics as well as analyses of variance, first-order correlations, and regression analyses were computed with the SPSS 20.0 software. We judged a $P < .05$ as significant; for correlation analyses we chose a significance level $P < .01$. With respect to classifying the strength of the observed correlations, we regarded $r > .5$ as a strong correlation, an r between .3 and .5 as a moderate correlation, an r between .2 and .3 as a weak correlation, and $r < .2$ as no or a negligible correlation.

3. Results

3.1. Description of the Sample. As shown in Table 1, 82% of enrolled persons were female and 18% male. Their mean age was 84 ± 7 years. Although most had a Christian denomination (84%), 56% would not describe themselves as religious; thus, also the religious Trust scores were low in the sample (Table 1).

Most were living alone but had access to their family (Table 1). They were recruited in residential homes (73%) and assisted accommodation homes (20%), while only 7% were recruited in nursing homes (mainly due to the relatively large amount of individuals with dementia which were not included). When asked for their self-care abilities (in terms of washing, dressing, mobility, etc.), 28% were independent and 27% partially independent, while 45% were completely depending on external help (Table 1).

Table 1: Sociodemographic and psychometric data of 100 interviewed elderly.

Variables	Mean/%
Age (mean ± SD)	84 ± 7
Gender (%)	
Men	18
Women	82
Family status (%)	
Married	13
Single/divorced	19
Widowed	68
Access to family (%)	88
Education level (%)*	
Primary/secondary	55
(Junior) high school	45
Denomination (%)	
Christian	84
None	16
Self-perceived religiosity (%)	
Religious	35
Not religious	56
Undecided	9
Type of institution (%)	
Residential home	73
Assisted accommodation	20
Residential nursing home	7
Self-care abilities (%)	
Independent	28
Largely independent	27
Only with help	45
Religious trust (SpREUK; mean ± SD; range 0–100)	38 ± 29
Daily life affections (VAS; mean ± SD; range 0–100)	44 ± 27
Life satisfaction (BMLSS; mean ± SD; range 0–100)	68 ± 13
Life satisfaction (FSQM; mean ± SD; range 1–6)	4.2 ± 0.9

Results are means ± standard deviation (SD) or percentage of the respective sociodemographic or psychometric variables. *Categorization of education level has to be interpreted with caution because it refers to the conditions of the time period from 1920 to 1950 with limited access to higher education. BMLSS: Brief Multidimensional Life Satisfaction Scale; FLQM: "quality of life in elders with multimorbidity" questionnaire; SpREUK: "Spiritual and Religious Attitudes in Dealing with Illness" questionnaire; VAS: visual analogue scale.

Self-assessed daily life affections scored moderately indicating that they feel "somewhat" to "moderately" affected. Life satisfaction scored on both scales (BMLSS an FSQM) in the moderate upper range indicating that they were mostly satisfied with their life (Table 1).

3.2. General Comments. During the assisted interviews, several started to weep (both women and men) because they were never confronted directly with their inmost perceptions, and they never were invited to talk about these perceptions and needs. Often the interviewees regarded these talks as "liberating," pleasant, and enriching.

Of importance for the interpretation of the data was the fact that several regarded the term "needs" as too strong and replaced it with the term "wish."

Because most of the elderly were raised with a specific religious background, several were skeptic using the term "spirituality" because it was misinterpreted as esoteric and occultism on the one hand and engrossed religiosity and abstract transcendent convictions on the other hand. The term "believing" instead of "religious" was preferred because several intended to distance themselves from the church as an institution.

Several argued that they never have had spiritual needs or some kind of faith or that they have lost their faith because of their experiences during World War II or "strokes of fate," while for others drastic experiences confirmed their faith or they developed distinct forms of wide and trustful philosophies.

For the following description of specific needs we added individual statements as comments or interpretations of the respective findings.

3.3. Ranking of Specific Spiritual Needs. The ranking of the specific needs showed a wide range of relevant needs (Table 2). The need to "plunge into beauty of nature" was the strongest, followed by the needs to "feel connected with family" and to be "invited again by friends," to "reflect previous life," to be "complete and safe," to "turn to someone in a loving attitude," to "solace someone," and so forth. Although the interviewees' comments indicate that most feel connected with their family, they nevertheless fear to burden their family with their own troubles, fears, and worries, and thus the wish to "receive more support from the family" and to be "reinvolved by the family in their life concerns" was relatively low. This clearly contrasts with the stated needs to "turn to someone in a loving attitude" and to "give away something" (Table 2) which refers to the own children and grandchildren.

3.3.1. Talking with Others. Talking with someone about "life after death," about "meaning in life," or "meaning in illness and/or suffering" was of low relevance with respect to the scoring, while talking about "fears and worries" was of moderate interest (Table 2). Although family members were the preferred partners, several fear that they could burden them with their own hardships ("The children have their own life and their own worries"). Moreover, the individual statements made clear that closer relations or confiding talks with other residents were rare; often they felt an impersonal, cool, and egoistic atmosphere among the residents. Complicating was the fact that relations to close friends are reduced because several of them are already deceased or were unable to come to visits (due to decreasing physical strength or own illness).

3.3.2. Religious Issues. With respect to religious issues, it was striking that private praying was of higher relevance than praying with someone or the intention that someone is praying for the person and that "someone of your community cares for you" (Table 2). This preferred private prayer is often

Table 2: Ranking of specific needs.

Item number	Stated needs	Mean	SD	Related factor
N6	Plunge into beauty of nature	2.23	1.00	IP
N25	Feel connected with family	1.89	1.26	—
N4	Reflect previous life	1.56	1.17	EN
N13	Turn to someone in a loving attitude	1.52	1.24	IP
N24	Being complete and safe	1.38	1.29	—
N29	Invited for private meetings by friends again	1.26	1.18	—
N14	Give away something from yourself	1.25	1.24	(GG)
N15	Solace someone	1.09	1.20	GG
N20	Pray for yourself	1.01	1.10	RN
N9	Listen to touching music	0.99	1.12	—
N26	Pass own life experiences to others	0.98	1.06	GG
N21	Participate at a religious ceremony	0.94	1.10	RN
N7	Dwell at a place of quietness and peace	0.91	1.20	IP
N2	Talk with others about fears and worries	0.70	1.12	IP
N23	Turn to a higher presence	0.70	1.10	RN
N1	Receive more attention	0.69	1.11	—
N8	Find inner peace	0.67	1.11	IP
N11	Talk with someone about the question of meaning in life	0.55	1.00	EN
N28	Reinvolved by family in their life concerns	0.43	0.90	—
N10	Find meaning in illness and/or suffering	0.41	0.84	EN
N5	Dissolve open aspects of your life	0.37	0.87	(EN)
N22	Read religious/spiritual books	0.28	0.72	RN
N30	Receive more support from your family	0.28	0.75	—
N17	Be forgiven	0.26	0.72	(IP)
N16	Forgive someone from a distinct period of your life	0.23	0.68	EN
N12	Talk with someone about the possibility of life after death	0.22	0.66	EN
N18	Pray with someone	0.19	0.60	RN
N3	Someone of your community (i.e., priest, chaplain) cares for you	0.15	0.52	(RN)
N19	Someone prays for you	0.11	0.49	RN

Results are means ± standard deviation (SD) of the respective needs (range: 0–3). The items refer to the following factors: religious needs (RN), existential needs (EN), inner peace needs (IP), and giving/generativity (GG); some items are additional items which are not regarded as spiritual needs.

regarded as a "ritual" and a matter of "tradition" and refers to a few words of gratitude or the request for protection/shelter. This fits to the relatively low intention to "turn to a higher presence (i.e., God)" (Table 2).

3.4. Expression of Specific Spiritual Needs and Sociodemographic Variables. Relying on the respective factors of spiritual needs, it was obvious that *religious needs* and *existential needs* scored low, while *inner peace* needs scored somewhat higher and needs for *giving/generativity* the highest (Table 3). *Religious needs* were lowest in male persons, and in trend higher in those with low self-care abilities. Those with a Christian denomination had higher *religious needs* than those without any denomination (mean score: 0.6 ± 0.6 versus 0.2 ± 0.2; $F = 8.4$, $P = .005$), while all other needs did not differ with respect to denomination (data not shown). The level of education had no significant influence on the expression of SpNQ scores (data not shown).

3.5. Correlations between Spiritual Needs and Quality of Life/Life Satisfaction. *Religious needs* were strongly correlated with religious trust, and moderately with the other needs scales (Table 4). *Inner Peace* needs were strongly related to *existential needs* and also *giving/generativity.*

Both life satisfaction measures (FLQM and BMLSS) were weakly (negative) associated only with needs for *Inner Peace*, while the perception of daily life affections was positively associated with *giving/generativity* but with none of the other needs scales (Table 4).

With respect to positive and negative mood states, there were no significant (with $P < .01$) associations with positive mood or despair, while grief was moderately associated with *inner peace* needs (Table 4). Detail analyses revealed that grief was particularly associated with the need to "talk with others about fears and worries" ($r = .41$), to "find inner peace" ($r = .39$) and to "receive more attention" ($r = .37$). In contrast, tiredness was moderately correlated with *existential needs*, *inner peace* needs, and weakly also with *religious needs* and

Table 3: Mean values of spiritual needs scores.

	Religious needs	Existential needs	Inner peace needs	Giving/generativity
All				
Mean	0.54	0.59	1.07	1.29
SD	0.58	0.49	0.63	0.91
Gender				
Female				
Mean	0.60	0.60	1.06	1.28
SD	0.59	0.49	0.61	0.92
Male				
Mean	0.26	0.59	1.11	1.31
SD	0.44	0.49	0.73	0.87
F value	**5.3**	0.0	0.1	0.0
P value	**.023**	n.s.	n.s.	n.s.
Self-care abilities				
Only with help				
Mean	0.68	0.66	1.03	1.27
SD	0.67	0.45	0.64	1.00
Largely independent				
Mean	0.39	0.50	0.91	1.19
SD	0.49	0.45	0.50	0.70
Independent				
Mean	0.45	0.58	1.27	1.42
SD	0.46	0.57	0.70	0.95
F value	2.7	0.9	2.4	0.6
P value	.074	n.s.	.092	n.s.

Results are means ± standard deviation (SD) of the respective scales (range: 0–3) as measured with the Spiritual Needs Questionnaire (SpNQ). We judged $P < .05$ as significant but indicated also statistically notable trends ($.5 < P < 1.1$).

Table 4: Correlations between spiritual needs, quality of life/life satisfaction, and mood states.

	Religious needs	Existential needs	Inner peace needs	Giving/generativity
Spiritual needs (SpNQ)				
Religious needs	1	0.304**	0.398**	0.360**
Existential needs		1	0.537**	0.450**
Inner peace needs			1	0.622**
Giving/generativity				1
Religious trust (SpREUK)	0.759**	0.111	0.286**	0.236
Life satisfaction/quality of life				
FLQM index	−0.079	−0.149	−0.294**	−0.056
BMLSS sum score	0.010	−0.213	−0.279**	−0.097
Daily life affections (VAS)	0.172	0.256	0.208	0.262**
Mood states (ASTS)				
Positive mood	0.043	0.047	−0.085	0.219
Grief	0.231	0.251	0.406**	0.118
Despair	0.174	0.236	0.223	0.125
Tiredness	0.271**	0.397**	0.361**	0.263**

** $P < .01$ (Pearson). ASTS: Profile of Mood States; BMLSS: Brief Multidimensional Life Satisfaction Scale; FLQM: "quality of life in elders with multimorbidity" questionnaire; SpNQ: Spiritual Needs Questionnaire; SpREUK: "Spiritual and Religious Attitudes in Dealing with Illness" questionnaire; VAS: visual analogue scale.

giving/generativity. Detail analyses showed that tiredness was particularly associated with the need to "talk with others about fears and worries" (r = .42), to "pray with someone" (r = .34), and to "find meaning in illness and/or suffering" (r = .34).

3.6. Predictors of Spiritual Needs. Because we empirically investigated several variables that could have influenced the spiritual needs, we performed regression analyses to identify the most significant predictors (Table 5). The variables which were recognized to have a significant impact on the respective needs included the aforementioned significant variables, that is, mood states, life satisfaction, daily life affections, religious Trust, and also self-care abilities. As shown in Table 5, *religious needs* can be predicted best (R^2 = .67) by religious trust, followed by tiredness and negatively by age. *Existential needs* were predicted with lower power (R^2 = .25) by tiredness and, however, by positive mood. *Inner peace* needs were predicted (R^2 = .37) best by religious trust, and grief, tiredness and negatively by age. Needs for *giving/generativity* were predicted with low power (R^2 = .20) by religious trust and tiredness. In all regression models, life satisfaction was not among the significant predictors. Since the regression coefficients may be compromised by collinearity, we checked the Variance Inflation Factor (VIF) as an indicator for collinearity. A VIF higher than 10 is indicative of high collinearity. In all cases, the Variance Inflation Factor was <2.5 indicating that collinearity was not present in the respective models.

4. Discussion

4.1. Interpretation of Needs. We investigated psychosocial and spiritual needs of elderly living in retirement/nursing homes and found that most needs scored low when compared to the responses of patients with chronic pain diseases or cancer [6]. The wish to "plunge into beauty of nature" was expressed highest, also the needs to "feel connected with family," to "turn to someone in a loving attitude" and to "reflect previous life" were of strong relevance. All these needs or wishes can be interpreted as the intention to (re-)connect-with environment/nature, with others, and with own life. Also the intention to "pass own life experiences to others," to "give away something," and to "solace someone" can be seen in this light. Obviously the residents have something to offer; they would like to connect with those who will remember them. This motif points to Erikson's psychosocial stage of development called "generativity" [36], which refers to the ability to care for others, guide the next generation, and to be assured that the own life was meaningful to others. However, although the residents may have this wish or intention, it seems that they have made the experience that there is limited interest in their offer.

In line with this was the finding that the needs to talk with others, which is a domain of relatedness with respect to Alderfer's ERG model [9], may depend on the topic. Talking with someone about "life after death," "meaning in life," or "meaning in illness and/or suffering" was of lower relevance than talking about "fears and worries." Again one may refer to individual statements that the residents may fear to burden others with their concerns. It seems that they are reluctant to talk about suffering, death and valediction; instead they intend to talk about "fears and worries", yet they lack closer relations which would facilitate this (because several of their friends are already dead or too ill to visit them). This topic requires further analyses in future studies.

Of interest was the fact that only 35% of the residents regarded themselves as religious (and, thus, religious trust scored low). In line with this, residents' *religious needs* were of minor relevance—with the exception of praying. It might be that praying is much more a ritual to them than an indicator of a specific longing for higher support, as verified by their limited interest to "turn to a higher presence". Although connection and relatedness are important topics in this population, it is obvious that this intention to relate does not refer to "someone of the community" (i.e., priest, chaplain) or to "praying with someone" or that "someone is praying" for them. Although organized forms of religiosity seem to be less important, participation at a religious ceremony (i.e., service attendance) was nevertheless a need of relevance. Similar to their intention to pray (i.e., to express gratitude or to request for protection/shelter) one may suggest that this participation at religious ceremony is much more a matter of tradition which would connect them to their childhood experiences, and could also provide some kind of consolidation.

With respect to Alderfer's ERG model [9] it seems that, for the elderly living in retirement/nursing homes, where the existence dimension may become more and more insecure, and the possibilities to develop (in terms of growth needs) are restricted, their needs for relatedness (with friends and family) have become of outstanding relevance. Interestingly, this relatedness refers to concrete others rather than transcendent sources in terms of a religion.

4.2. Associations between Spiritual Needs and Life Satisfaction Associated Variables. Borg et al. [37] investigated people aged 65 to 89 living in six European countries and found that their life satisfaction was significantly associated with overall health, self-esteem and negative mood such as worry, rather than reduced activities of daily living. In our study, in all regression models life satisfaction was not among the significant predictors, instead mood states. Correlation analyses revealed that needs for *Inner Peace* were influenced by negative mood states such as grief and tiredness, and by low life satisfaction; also *Existential Needs* were moderately related to tiredness. Thus, in elderly negative mood states (which are negatively related to life satisfaction, i.e., grief r = −.53, and tiredness r = −.30) seem to be one of the contributors to report specific spiritual needs. Nevertheless, the best predictors of elderlys' various spiritual needs were religious trust and mood states, particularly tiredness. *Inner Peace* needs were predicted best by religious trust, and by grief and tiredness. One may argue that these *Inner Peace* needs may simply mean to find rest and peace in the own residence (in terms of a sanctuary when nothing more is left) or that they may have a religious connotation (i.e., salvation,

Table 5: Regression analyses with spiritual needs as dependent variables (enter method).

Model	Beta	T	P
Dependent variable: religious needs (R^2 = .67)			
(Constant)		.339	.735
Grief (ASTS)	.016	.177	.860
Despair (ASTS)	.093	1.187	.238
Tiredness (ASTS)	**.189**	**2.503**	**.014**
Positive mood (ASTS)	.070	.906	.367
Quality of life (FLQM Index)	−.061	−.676	.501
Life satisfaction (BMLSS)	.165	1.745	.085
Daily life affections (VAS)	.062	.823	.413
Self-care abilities	−.146	−2.194	.031
Religious trust (SpREUK)	**.699**	**10.868**	**.000**
Female gender	.068	1.051	.296
Age	**−.131**	**−2.041**	**.044**
Dependent variable: existential needs (R^2 = .25)			
(Constant)		−.139	.890
Grief (ASTS)	.115	.840	.403
Despair (ASTS)	.080	.667	.506
Tiredness (ASTS)	**.375**	**3.275**	**.002**
Positive mood (ASTS)	**.254**	**2.165**	**.033**
Quality of life (FLQM index)	.144	1.049	.297
Life satisfaction (BMLSS)	−.188	−1.306	.195
Daily life affections (VAS)	.030	.260	.795
Self-care abilities	−.093	−.922	.359
Religious trust (SpREUK)	.055	.564	.574
Female gender	−.082	−.840	.403
Age	.032	.329	.743
Dependent variable: inner peace needs (R^2 = .37)			
(Constant)		2.619	.010
Grief (ASTS)	**.265**	**2.116**	**.037**
Despair (ASTS)	−.021	−.192	.848
Tiredness (ASTS)	**.213**	**2.035**	**.045**
Positive mood (ASTS)	.021	.195	.846
Quality of life (FLQM Index)	.022	.174	.862
Life satisfaction (BMLSS)	−.136	−1.031	.305
Daily life affections (VAS)	.023	.221	.826
Self-care abilities	.178	1.931	.057
Religious trust (SpREUK)	**.279**	**3.129**	**.002**
Female gender	−.147	−1.643	.104
Age	**−.221**	**−2.491**	**.015**
Dependent variable: giving/generativity (R^2 = .20)			
(Constant)		1.059	.293
Grief (ASTS)	−.083	−.590	.557
Despair (ASTS)	.043	.349	.728
Tiredness (ASTS)	**.250**	**2.113**	**.037**
Positive mood (ASTS)	.212	1.744	.085
Quality of life (FLQM Index)	.075	.525	.601
Life satisfaction (BMLSS)	−.209	−1.404	.164
Daily life affections (VAS)	.073	.617	.539
Self-care abilities	.053	.505	.615
Religious trust (SpREUK)	**.238**	**2.357**	**.021**
Female gender	−.051	−.502	.617
Age	−.081	−.802	.425

Significant variables were highlighted (bold). *Because the regression coefficients may be compromised by collinearity, we checked the Variance Inflation Factor (VIF) as an indicator for collinearity. VIF > 10 is indicative of high collinearity. In all cases, the VIF was <2.5, and thus these data are not depicted here. ASTS: Profile of Mood States; BMLSS: Brief Multidimensional Life Satisfaction Scale; FLQM: "quality of life in elders with multimorbidity" questionnaire; SpNQ: Spiritual Needs Questionnaire; SpREUK: "Spiritual and Religious Attitudes in Dealing with Illness" questionnaire; VAS: visual analogue scale.

resurrection after death), and thus the experience of grief and tiredness might be associated with the hope that there might be "comfort" by a transcendent source ("heaven"). This suggestion would be underlined by the fact that also *Religious needs* and *Giving/Generativity* were predicted by religious trust and tiredness; it may refer to a "tiredness of life" rather than a lack of sleep, and thus the own religiosity could be a source to provide a "secure haven". However, these hypotheses have to be verified in future studies. The predictor pattern of *Existential needs* was surprising because these needs were predicted best (albeit with weak predictive power) by tiredness and also by positive mood. Both are only weakly related ($r = -.20$), and thus more complex explanations have to be suggested.

5. Limitations

A limitation of this study was the cross-sectional design, which does not allow for causal interpretations; longitudinal studies are needed to substantiate the findings of this study. Moreover, the data might not be representative for all elderly living in retirement homes (particularly men are underrepresented). One may suggest that not only regional differences but also differences in the commitment of the retirement/nursing home operators may have an influence whether the residents feel adequately supported or not. Further studies which enroll retirement home residents from different areas and operators are currently in preparation.

6. Conclusion and Outlook

Elderly living in residential and nursing homes have specific psychosocial and spiritual needs which are in most cases not recognized and can thus not be addressed. As advised by Borg et al. [37] adequate health care for elderly should not only consider decreasing functional capacities of elderly, but also the individual's perception of health and self-esteem. The focus on personal factors seems to be of outstanding importance, and the findings of this study support this recommendation. However, it remains an open issue how these factors can be adequately supported.

Shea [4] advised that pastoral care specialists might be beneficial because they could help finding "inner power that produces hope and character". However, most of the enrolled elderly had no specific interest in priests or chaplains. Other professions such as nurses, psychologists and social workers might be in charge to care, to listen and to help elderly to review their life which was a strong need among the residents enrolled in this study. Of course they might not be the most appropriate partners (the family seems to be of stronger importance), but they are often those who are more easily available, and they may be able to identify disrupted relationships. It is obvious that there is a need to "develop creative, long-range strategies for providing care" [4] which meet the needs of elderly living in secular societies. One interesting approach could be life reviews or reminiscing interventions. A randomized study by Gonçalves et al. [38] found that a life review decreased depressive symptoms and contributed to improve older womens' life satisfaction. A further randomized controlled study reported significantly lower depressive symptoms in elderly participating an autobiographical writing workshop [39]. In contrast, a randomized controlled study by de Medeiros et al. [40] found that an autobiographical writing workshop may improve the ratings of self-concept among older adults, but not their mood when compared to the outcomes of a reminiscence group (which was an active control intervention) or to a no-treatment control group. At least such life reviews may contribute to connect elderly with their own past, and can function as a "legacy" of life experiences to connect with future generations. This will meet the specific needs to reflect previous life and to pass own life experiences to others, and thus to connect with those who will remember them.

We hope that the current data and reflections encourage a discussion which integrative approaches might be appropriate to support elderly living in residential and nursing homes. Although one may assume that particularly interventions of the wide field of mind-body medicine might be beneficial, this remains to be verified.

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The authors did not receive external grants or funds to perform this study, and they disclose any potential conflict of interests.

Ethical Approval

Ethical approval was obtained by the IRB of Witten/Herdecke University (no. 74/2008).

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Research Article

Spiritual Therapy to Improve the Spiritual Well-Being of Iranian Women with Breast Cancer: A Randomized Controlled Trial

Najmeh Jafari,[1] Ziba Farajzadegan,[1] Ahmadreza Zamani,[1] Fatemeh Bahrami,[2] Hamid Emami,[3] Amir Loghmani,[1] and Nooshin Jafari[4]

[1] *Community Medicine Department, School of Medicine, Isfahan University of Medical Sciences, Hezar Jerib Street, Isfahan, Iran*
[2] *Consultation Department, Psychology school, Isfahan University, Hezar Jerib Street, Isfahan, Iran*
[3] *Radiotherapy Department, School of Medicine, Isfahan University of Medical Sciences, Hezar Jerib Street, Isfahan, Iran*
[4] *Anesthesiology Department, School of Medicine, Isfahan University of Medical Sciences, Hezar Jerib Street, Isfahan, Iran*

Correspondence should be addressed to Ahmadreza Zamani; zamani@med.mui.ac.ir

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Purpose. The aim of this study was to investigate the role of spiritual therapy intervention in improving the spiritual well-being and quality of life (QOL) of Iranian women with breast cancer. *Methods*. This randomized controlled clinical trial (RCT) recruited 65 women with breast cancer, randomly assigned to a 6-week spirituality-based intervention ($n = 34$) or control group ($n = 31$). Before and after six-week spiritual therapy intervention, spiritual well-being and quality of life (QOL) were assessed using Functional Assessment of Chronic Illness Therapy Spiritual Well-being scale (FACIT-Sp12) and cancer quality-of-life questionnaire (QLQ-C30), respectively. t-test, Paired t-test, pearson's correlation, and hierarchical regression analyses were used for analysis using Predictive Analytic software (PASW, version 18) for Windows. *Results*. After six spiritual therapy sessions, the mean spiritual well-being score from 29.76 (SD = 6.63) to 37.24 (SD = 3.52) in the intervention group ($P < 0.001$). There was a significant difference between arms of study ($F = 22.91$, $P < 0.001$). A significant positive correlation was detected between meaning and peace with all subscales of functional subscales on European Organization for Research and Treatment of Cancer quality of Life (EORTC QLQ-C30) ($P < 0.05$). Hierarchical regression analyses of participants indicated that the study arm, pain, and financial impact were significant predictors of spiritual well-being and overall QOL. Social functioning was another significant predictor of spiritual well-being. *Conclusion*. The results of this randomized controlled trial study suggest that participation in spiritual therapy program is associated with improvements in spiritual well-being and QOL. Targeted interventions to acknowledge and incorporate spiritual needs into conventional treatment should be considered in caring of Iranian patients with breast cancer.

1. Introduction

Breast cancer is the top cancer among women worldwide with an increasing incidence in developing countries such as Iran [1, 2]. It constitutes 25% of all cancers among Iranian women, with the highest rate in those aged between 35 and 44 years [3, 4].

Diagnosis of breast cancer is a tragic event for a woman [5]. Adjusting to the news of having cancer, informing relatives about disease, planning for treatment and surgery, and treating side effects may cause psychological distress and morbidity in these patients [6]. Several psychosocial interventions have been developed to decline the psychological morbidity associated with the disease and to improve daily functioning and quality of life of these patients. Interventions such as exercise [7, 8], peer support group [9–11], mindfulness-based stress reduction (MBSR) program [12–14], and cognitive behavioral therapy (CBT) [15–17] showed that they can have a positive effect on quality of life of these patients.

Confronting cancer diagnosis and its challenges, many cancer patients seek comfort in spiritual beliefs, which in some cases are associated with positive psychological outcomes [18, 19]. Religious and spiritual coping has been associated with lower levels of distress besides anger, anxiety, and social isolation in cancer patients as well as better adjustment with cancer [20–22].

Spirituality is defined as "the aspect of humanity that refers to the way individuals seek and express meaning and purpose, and the way they experience their connectedness to the moment, to self, to others, to nature and to the significant or sacred [23]." Spiritual or religious dimensions are likely to be embedded in issues such as meaning [24, 25], control [26, 27], identity [28–30], and relationships [31, 32]. Interventions that increase spiritual well-being may allow cancer patients to reevaluate life goals, priorities, and sources of meaning in their life and help them to reduce emotional reactivity and increase appreciation for life [33, 34].

Even though research has indicated the significance of spirituality in the quality of life of patients with cancer, there is minimal information in the literature documenting the effect of spirituality-based interventions in different cultures such as Iranian Muslim patients. The results of a recent cross-sectional study showed that Iranian Muslim patients have a lower level of spiritual well-being especially in meaning and peace subscales of Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp12) [35]. This highlights the need to examine the effects of spirituality-based interventions in an Iranian context. Fallah et al. examined the effect of spiritual group intervention on the increase of hope, life satisfaction, and happiness in Iranian women surviving breast cancer and found that this intervention was beneficiary for increasing the mental strengths of these patients [36]. However, there is still lack of evidence regarding results of spiritual therapy in terms of spiritual well-being and its relation to QOL.

The purpose of the current trial was to study whether a spiritual therapy intervention might be effective in improving the spiritual well-being and quality of life of Iranian women with breast cancer.

2. Methods

2.1. Design. A randomized controlled clinical trial was undertaken to compare the efficacy of spiritual therapy intervention with standard care in improving the spiritual well-being and QOL of patients with breast cancer undergoing radiation therapy. A detailed description of the methodology has been indicated elsewhere [37].

2.2. Participants. Participants were recruited from Breast Cancer Research Center, St. S. Al-shohada hospital, which is the only referral center for cancer treatment and rehabilitation in Isfahan, Iran. Eligibility criteria included age more than 18 years, breast cancer diagnosis within the last 12 months, and a treatment recommendation of radiation therapy of at least 2 weeks. Patients with concomitant chronic disease and major depression disorder and absent in 2 consecutive sessions were excluded.

Participants were randomly assigned following simple randomization procedures (computerized random numbers) to either the structured intervention arm or standard medical care arm. Participants in control group received standard management and treatment and routine educational program (based on nutrition, physical activity, and radiation therapy patient-education program). Intervention group received routine management/education and also an additional education program based on spiritual therapy intervention.

The major outcomes of this study were spiritual well-being and QOL.

2.3. Instruments. To assess the spiritual well-being of participants, we used the Persian version of 12-item Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp12) questionnaire. This is a valid and reliable instrument to provide an inclusive measure of spirituality in research and clinical practice [38, 39]. This questionnaire contains 12 spirituality items and three subdomains of spiritual well-being peace, meaning, and faith (scale range, 0–48; higher scores signifying greater spiritual well-being) [40]. All 3 scales have high internal consistency (Cronbach's alpha for total scale, 0.87; for meaning/peace subscale, 0.81; for faith subscale, 0.88) [38]. This questionnaire is translated and validated in Persian by authors and the psychometric properties of the questionnaire are confirmed [41].

The quality of life in these patients was assessed by European Organization for Research and Treatment of Cancer Quality of Life (EORTC QLQ-C30) [43, 44]. QLQ-C30 incorporates nine multi-item scales: five functional scales (physical, role, cognitive, emotional, and social); three symptom scales (fatigue, pain, and nausea and vomiting); and a global health and quality-of-life scale. Several single-item symptom measures are also included [43].

This questionnaire is translated and validated in Persian by Montazeri et al. in 2000 and they found that the Iranian version of the EORTC QLQ-C30 is a reliable and valid measure of health-related quality of life among women with breast cancer [45].

The questionnaires and demographic data were administered by the researchers in face-to-face interviews.

Sociodemographic data included demographic information (age, marital status, education, occupation, and religion) and concurrent chronic disease, collected through a questionnaire. Clinical data including pathological disease stage was extracted from medical records.

The intervention was provided over the course of six sessions weekly (Table 1). Each session had a theme incorporating the specific domains of spirituality concluded with a 20- to 30-minute guided relaxation and meditation exercise. Participants received a 50-page manual and a CD-ROM containing written materials and powerpoint slides covered in each of the six sessions for their review. The educators were 3 spiritual healers with great experience in this field. Each of the educators participated in every step of the development of this intervention and used structured, manualized materials.

Table 1: Spiritual therapy intervention.

Sessions	Main theme	Definition
Session 1	Introduction	Defining the course and introduction. In this session, the participants discussed the possibility of finding or creating meaning out of their experience of cancer. We asked patients to recognize the inner conflict and punishing feelings they have towards themselves and to facilitate a more positive meanings of their cancer experience
Session 2	Relaxation and meditation	Teaching relaxation and meditation by a qualified mentor. All sessions included instruction and active meditation practice. The patients were encouraged to practice this technique individually at home twice a day and given a video-compact disk for guidance
Session 3	Control	This session focused on two aspects of control: things under personal control and things beyond the personal control. We assisted participants to differentiate between these two and write their concerns in two different circles. By focusing on the circle labeled "under God's control," participants were asked to concentrate on the visualized God's presence around them as a white light and put uncontrolled concerns and problems under God's control. For things under their personal control, we invited participants to use a collaborative approach and view God as a supportive, kind, and helpful partner toward conflict resolution
Session 4	Identity	In this session participants were encouraged to express their grief associated with their disease. We asked them to explore the negative and positive feelings and affirm their strengths and positive attributes inside themselves connecting with them to fight against cancer. Imagining God's presence as a witness to their loss and pain helped participants feel that their losses are acknowledged and guided them to accept and affirm the individual's self-worth
Session 5	Relationships	The focus of this session was on three types of relationships: relationships with oneself, with others, and with God. Listening to one's feelings, positive self-talk, and self-care helped patients to facilitate the relationship with oneself. To resolve any negative feeling about relationship with others, a version of the "two chair" technique—employed by Gestalt psychologists—was used [42]. Participants were encouraged to concentrate on their relationship with God and any emotion such as guilt, anger, or neglect that they may feel toward God. Then, patients led through "Circle of Light" guided imagery and talked to God closely
Session 6	Prayer therapy	Encouraging the participants to pray and talk to God closely based on their religious and spiritual believes and ask Him to help them in this process

There were back-up persons for each educator who were trained to use the manual and conduct the session.

Each session lasted approximately 2-3 hours and was balanced with didactic material, a question and answer period, sharing, reflecting, and relaxation and meditation practice. Sessions were recorded as audio and the meditation session was recorded on videotape. These recordings were assessed after each session by independent reviewers to ensure the fidelity of the healers to the protocol. The video-CD of the meditation session was given to the patients as their guidance for home practice. Furthermore, participants were asked to comment on the specific quality of the main theme of each session. This ensured reliability and reproducibility of the interventions over the course of the study.

2.4. Analysis. The scale scores of the QLQ-C30 and FACIT-Sp12 were computed as recommended in the scoring manuals [40, 46]. All descriptive statistics are presented as means and standard deviations for quantitative variables and as relative frequencies and percentage for categorical variables. EORTC-QLQ and spirituality scores are presented as means with their 95% confidence intervals. Two-sample t-tests were used for the comparison of continuous variables and Pearson's chi-square tests were used for the comparison of categorical variables.

The overall QOL and spiritual well-being before and after study were compared using Paired t-test.

Pretherapy versus posttherapy comparisons were carried out using the paired t-test if the data was approximately normal or the Wilcoxon signed-rank test if it was not. All comparisons were carried out on a two-tailed basis.

We estimated effect sizes by dividing the mean difference between conditions after intervention by the pooled standard deviation of the groups.

The Pearson correlation analyses were used to study the bivariate relationships between quality of life domains and spiritual well-being.

Hierarchical regression analyses were conducted to examine the study arm as a predictor of spiritual well-being and QOL after controlling for the corresponding baseline variables and to investigate other predictors of these outcomes.

Data of participants were analyzed by the Predictive Analytic Software (PASW, version 18) for Windows.

2.5. Ethics. This trial has been assigned the Iranian Randomized Controlled Trial Registry Number IRCT138904-024242N1. The design of the study was approved by Ethics Committee of Vice Chancellor for Research, Isfahan University of Medical Sciences (project number 389319). All participants received trial information and provided written informed consent. Also, the confidentiality of all information was managed carefully by researchers.

Table 2: Mean baseline and posttrial spiritual well-being score by group (n = 65).

Measure	Intervention group n = 34				Control group n = 31				Effect size	P value
	Baseline		After trial		Baseline		After trial			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
FACIT-Sp12 Scores										
Meaning	10.21	2.96	12.09	1.50	9.45	3.15	9.55	3.14	0.33	<0.001
Peace	7.97	2.44	11.41	1.46	7.41	3.09	7.54	2.46	0.74	<0.001
Faith	11.59	2.90	13.74	1.75	11.06	3.08	11.45	2.33	0.31	<0.001
Total	**29.76**	**6.63**	**37.24**	**3.52**	**27.93**	**7.11**	**28.55**	**5.32**	**0.61**	**<0.001**
QLQ C-30 functional scales										
Global QOL/general health	44.37	13.03	68.63	10.86	37.90	22.44	39.25	15.98	0.78	<0.001
Physical functioning	71.76	12.71	63.60	19.53	62.58	22.15	61.94	19.79	0.44	0.02
Role functioning	61.11	25.82	76.96	20.10	67.20	25.63	61.83	26.94	0.49	0.01
Emotional functioning	44.14	20.49	65.44	13.31	42.47	23.70	36.56	21.80	0.67	<0.001
Cognitive functioning	53.15	25.10	68.14	17.09	55.91	25.29	53.23	24.12	0.49	0.005
Social functioning	49.10	27.20	71.08	19.80	45.70	28.20	42.47	26.11	0.63	<0.001
QLQ C-30 symptom scales/items										
Fatigue	59.46	19.28	37.58	17.51	53.05	24.79	60.57	23.10	0.61	<0.001
Nausea and vomiting	25.68	27.10	18.63	18.24	26.88	24.97	23.12	19.08	0.53	0.03
Pain	45.95	22.36	29.90	16.80	45.16	23.25	48.92	21.05	0.62	<0.001
Dyspnea	19.82	29.87	18.63	18.69	29.03	31.90	33.33	24.34	0.10	0.83
Sleep disturbance	45.95	31.77	36.27	26.42	47.31	35.25	54.84	39.01	0.43	0.03
Appetite loss	37.84	27.40	30.39	25.11	33.33	28.54	38.71	35.58	0.02	0.20
Constipation	32.43	33.78	32.35	30.13	24.73	35.45	34.41	34.94	0.01	1.00
Diarrhea	14.41	25.50	13.73	26.10	17.20	24.14	15.05	24.09	0.01	0.42
Financial impact	66.67	34.24	43.14	29.04	66.67	28.54	68.82	30.95	0.39	<0.001

3. Results

3.1. Participant Characteristics. Of the 123 possible participants, 96 patients acquired the inclusion criteria and were enrolled in the study. Sixteen patients were ineligible and excluded due to concurrent chronic disease (n = 14) and major depression (n = 2). Fifteen patients refused to participate. The most common reasons for refusal, in order of frequency, include lack of interest in research participation (n = 7), excessive travel distance to the treatment center (n = 5) and not feeling well enough to participate (n = 3). In all sixty-five patients (34 patients in the spiritual therapy group and 31 patients in the control group) completed the 6-week intervention and were evaluated for the outcome.

The average age of the participants in the intervention group and the control group were 47.9 years (SD = 10.56) and 48.1 (SD = 10.2), respectively. Most patients were married (95.3%) and housewives (50.7%). Half of the patients were actively employed. All patients expressed their religious affiliation as Muslims. Of the 65 participants, 62% had mastectomy and 28% had conservative breast surgery. There were no significant differences in distribution of demographic and clinical characteristics between intervention and control groups. Hence, the treatment groups were well balanced at baseline for potentially confounding concomitant variables.

There were no significant differences between the study arms in these baseline characteristics at the time of randomization. There were no statistically significant differences in demographics between the women who attended and those who dropped out or never attended ($P > 0.05$).

3.2. Primary Analyses. Table 2 provides an overview of the baseline and after intervention spiritual well-being scores for the total sample (n = 65), including effect sizes.

After six spiritual therapy sessions, the mean spiritual well-being score changed from 29.76 (SD = 6.63) to 37.24 (SD = 3.52) in the intervention group ($P < 0.001$). There was a significant difference between arms of study (F = 22.91, $P < 0.001$). There was a significant improvement in all three (meaning, peace, and faith) subscales of FACIT-Sp 12 in spiritual therapy group after intervention ($P < 0.05$).

All functional scales of EORTC QLQ-C30 were improved after intervention. After six spiritual therapy sessions, the mean global health status score/QOL improved significantly in the intervention group.

There was no statistically significant difference in QOL and spiritual well-being scores between two times of measurement in the control group (Table 2).

3.3. Secondary Analyses. Bivariate relationships were determined between the outcome measures. There was a significant positive correlation between meaning and peace with all subscales of functional subscales on EORTC-QLQ C30 ($P < 0.05$). Faith was significantly correlated with all global

Table 3: Pearson's correlation (r-values) between spiritual well-being (FACIT-Sp12) and functional subscales on EORTC-QoL C30.

	Meaning	Peace	Faith
Global QOL/general health	0.518**	0.732**	0.334**
Physical functioning	0.364**	0.445**	0.385**
Role functioning	0.409**	0.379**	0.105
Emotional functioning	0.529**	0.701**	0.286*
Cognitive functioning	0.246*	0.411**	0.047
Social functioning	0.483**	0.653**	0.393**

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

quality of life and physical, emotional, and social subscales (Table 3).

As seen in Table 4, hierarchical regression analyses of participants indicated that study arm was a significant predictor of both spiritual well-being and overall QOL. After adjusting with baseline data, pain and financial impact were significant predictors of spiritual well-being and overall QOL. Social functioning was another significant predictor of spiritual well-being.

4. Discussion

We have reported the effect of a 6-week spiritual therapy program on the spiritual well-being and QOL of Iranian women with breast cancer. The primary results of this study indicated that the studied population has poor spiritual well-being especially in meaning and peace subscales of FACIT-Sp12. Being Muslim was associated with higher level of faith. Otherwise, our patients reported lower level of meaning and peace. This finding coheres with the results of another study on Iranian Muslim patients [35].

After 6 weeks, intervention participants reported changes in all domains of spiritual well-being and this difference was statistically significant between the intervention and control group. Evidence shows that improvement in spiritual well-being is associated with better adjustment to cancer [47, 48]; hope and positive mood states [49, 50]; functional well-being [51]; reduced hostility, anxiety, and social isolation [52]; and overall well-being and quality of life (QOL) [53–55]. Our analyses confirmed this association and showed a significant influence of the psycho-spiritual intervention on global QOL and physical, role, emotional, cognitive, and social scales of EORTC QLQ-C30. Not surprisingly, our analysis failed to show a significant effect on dyspnea, appetite loss, constipation, and diarrhea symptom scales. This may be due to the more physical (than spiritual) nature of the these symptoms.

The meaning and purpose in life may help in psychological adjustment following the acute stages of the disease and subsequent treatment [56]. Individuals who experience the existential benefits of this spiritual perspective may also experience better quality of life (QOL), willingness to live [57, 58]; and coping to disease [59]. Kinney et al. showed that an integrated mind-body-spirit self-empowerment program for breast cancer survivors can enable participants to experience a decline in distress, better quality of life, and a deeper sense of meaning and purpose in life as well as a greater sense of wellness [60]. Cunningham described 8-week "Steps Towards Spiritual Healing" program for cancer patients. After trial, the measures for mood, self-efficacy, quality of life, purpose in life, and spirituality demonstrated significant improvements [61].

Using the QLQ-C30, significant improvements were shown in the physical well-being scores of fatigue, pain, nausea and vomiting, and sleep disturbance. Previous research has found that activities such as meditation, yoga, and psycho-spiritual therapy can relieve or ease a wide range of physical symptoms [62, 63]. Brady et al. showed that cancer patients who reported a high degree of meaning in their lives were able to tolerate severe physical symptoms greater than patients with lower scores on meaning/peace [39].

Meaning and peace subscales of spirituality were moderately correlated with all global general health/QOL, physical, role, emotional, cognitive, and social functioning. There is empirical evidence for the moderate relationship between spirituality and quality of life, supporting the theoretical framework that spirituality is seen as a unique concept that stands in relationship to quality of life [64]. The existential meaning and peace components of spirituality were more strongly related to psychological adjustment than were faith. This result is in line with a large Australian study on 449 cancer patients, indicated that spiritual well-being has a positive association with health-related QOL domains, while the meaning/peace component is more highly related to QOL than the faith component [65].

In the present study, we used hierarchical multiple regression analysis to examine the association of spiritual well-being with QOL in survivors of breast cancer. Our results suggest that being in the spiritual therapy group was significantly associated with better spiritual well-being after controlling for disease and demographic variables. Pain, social functioning, and financial impact can predict the spiritual well-being of breast cancer survivors. This is in line with the results of a recent structural equation modeling of FACIT Sp12 while showed that spiritual well-being is positively associated with religiosity, self-esteem, and social relatedness, and is negatively associated with physical suffering [66].

On the other hand, pain and financial impact were significant predictors of global health/QOL. Cancer pain significantly affects quality of life and survival of patients with cancer [67]. Pain is present in 14%–100% of cancer patients and is associated with depression and has the most disruptive influence on the quality of life of cancer patients [68]. In addition, cancer treatment has a serious impact on financial aspects of patients' lives and seems to be associated with a poor quality of life [69]. This obviates a multidisciplinary approach in cancer treatment to comply with the needs of survivors.

An important aspect of the current study refers to the inclusion of spiritual therapy as an effective intervention for patients' spiritual well-being and QOL in a religious context. Iran is a religious country and 98% of its population are Muslims [70]. Qualitative studies from Iran showed that

Table 4: Significant predictors of spiritual well-being and overall global quality of life.

Dependent variable	Model	Standardized beta	*P* value	Standard error of the estimate	*R* square
Spiritual well-being	Group	−0.499	0.000	1.073	0.76
	Pain score	−0.302	0.000	0.025	
	Social functioning	0.273	0.003	0.021	
	Financial impact	0.196	0.013	0.016	
Global QOL	Group	−0.505	0.000	2.904	0.78
	Pain score	−0.295	0.000	0.072	
	Financial impact	−0.165	0.022	0.043	

spiritual approach is the major coping strategy to respond to cancer and Iranian cancer patients consider spirituality as a source of hope [18, 71–73]. The faith component of spirituality is most often associated with religion and religious belief, whereas the meaning component of spirituality appears to be a more universal concept [74]. This study provides evidence of the effectiveness of spiritual therapy in terms of meaning and peace subscales of spiritual well-being in an Iranian context.

Our study, while having much strength, involved some limitations that should be considered. This study had a small sample size, which reduced the statistical power. An additional limitation concerns the fact that the beneficial psychosocial effects of our study may be due to the positive effects of peer support in these patients. The lack of an "attention control group" in our study does not allow us to attribute all positive outcomes to spiritual therapy intervention. Furthermore, there was no follow-up program after six weeks to assess the effects of intervention. Future research with larger sample size should examine the effect of spirituality-based intervention on other types of cancer or patients with different religious beliefs.

5. Conclusion

The results of this randomized controlled trial study suggest that participation in spiritual therapy program is associated with improvements across spiritual well-being and several areas of quality of life, including physical, emotional, and social functioning. Targeted interventions to acknowledge and incorporate spiritual needs into conventional treatment, should be considered in caring of Iranian patients with breast cancer.

Authors' Contribution

N. Jafari was the main investigator, who analyzed the data and wrote the paper. A. Zamani contributed to the study design, data analysis, and writing of the paper. Z. Farajzadegan helped in designing the study, contributed to the analysis, and helped in writing the final paper. F. Bahrami contributed to study design and held spiritual therapy sessions. H. Emami helped in study design and patient recruitment and A. Loghmani contributed to the analysis of data and helped in writing the final paper. All authors read and approved the final version of paper.

Conflict of Interests

Authors declare no conflict of interests.

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Research Article

Aspects of Spirituality in Medical Doctors and Their Relation to Specific Views of Illness and Dealing with Their Patients' Individual Situation

Arndt Büssing,[1,2] Almut Tabea Hirdes,[1] Klaus Baumann,[2,3] Niels Christian Hvidt,[2,4] and Peter Heusser[5]

[1] *Institute of Integrative Medicine, Witten/Herdecke University, Gerhard-Kienle-Weg 4, 58313 Herdecke, Germany*
[2] *Freiburg Institute for Advanced Studies (FRIAS), Freiburg University, 79104 Freiburg, Germany*
[3] *Caritas Science and Christian Social Work, Faculty of Theology, Freiburg University, 79098 Freiburg, Germany*
[4] *Institute of Public Health, Faculty of Health Sciences, University of Southern Denmark, 5000 Odense, Denmark*
[5] *Chair of Theory of Medicine, Integrative and Anthroposophic Medicine, Institute of Integrative Medicine, Faculty of Health, Witten/Herdecke University, 58313 Herdecke, Germany*

Correspondence should be addressed to Arndt Büssing; arndt.buessing@uni-wh.de

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We intended to analyse which aspects of spirituality are of relevance for medical doctors in a mostly secular society and how their spiritual/religious attitudes are related to specific views of illness, their dealing with patients' individual situation, and finally physicians' life satisfaction. Data from an anonymous survey enrolling 237 medical doctors from Germany (mean age 45.7 ± 9.6, 58% male, 42% female) indicated that secular forms of spirituality scored highest, while specific religious orientation had the lowest scores. Physicians with a specific specialization in complementary/alternative medicine (CAM) or anthroposophic medicine differed from their conventional counterparts with respect to specific aspects of spirituality; however, the specific views associated with these specialisations were only weakly to moderately correlated with physicians' view on the meaning of illness and how they assume that they would deal with their patients' individual situation. Of interest, the specific aspects of spirituality were negatively correlated with the view of "illness as a meaningless interruption" of life, indicating that physicians with a spiritual attitude would see illness also as a chance for an "individual development" and associated with a "biographical meaning" rather than just a "useless interruption" of life.

1. Introduction

Physicians exercise a profession which contains many intrinsic and extrinsic gratifications: intrinsic gratifications like feeling medically competent by acting accordingly, "flow" experiences in being absorbed in their medical activities, achieving good results of treatments, being able to help people in need, being a point of reference, of authority, and of trustworthiness for the patients; as for extrinsic gratifications, we consider social prestige due to their role, financial gains and profits, and positions of superiority. All of these gratifications may in one way or another, in idiosyncratic constellations, help to compensate for the manifold demands and high levels of stress they deal with on a daily scale, both in practice and administration, and also, though less so, in professional politics. "Enough" intrinsic gratifications seem to be more consistent with, and useful for, their satisfaction with their work (and with themselves) rather than a too strong dependence on compensations by extrinsic gratifications [1, 2].

Much research has been done on what motivates people to become doctors [3], how medical students evaluate what makes "a good doctor" [4], and what inspires physicians in their daily work [5]. Likewise, extensive research has looked at the communication between doctors and patients [6], how patients often seek doctors for multiple reasons, many are different from the somatic problem they first present with [7], and how doctors evaluate and seek to alleviate the burdens

of their patients [8]. However, there is only limited research on the spiritual/religious attitudes of physicians, and how this may influence the way they interact with their patients.

Among a sample of 1,144 US physicians, 55% would agree that their religious beliefs may influence their practice of medicine [9]. Nevertheless, most would describe themselves as "spiritual" as distinct from "religious," which contrast with the general US population that sees both concepts "tightly connected" [9]. Most of these US physicians find it "appropriate" to discuss spiritual/religious issues "if the patient brings them up" (91%), and a large fraction encourage "patients' own R/S beliefs and practices" when these issues come up (73%) [10]. Interestingly, particularly physicians with high self-ascribed spiritual/religious attitudes are more likely to inquire spiritual issues and to encourage patients' spiritual/religious beliefs and practices [10]. Further, physicians' specific religious conviction may influence also medical care decision. Curlin et al. [11] reported that particularly highly religious physicians have clear objections to physician-assisted suicide (in fact, the majority of physicians had objections) and also to terminal sedation (which is objected only by 18%) when compared to those with low intrinsic religiosity, while the withdrawal of life support (overall 5% have objections) was not a matter of objection between physicians with low, intermediate, or high religious attitude. This means that specific religious attitudes, convictions, and worldviews of both patients and medical doctors may have an influence on their communication and resulting medical decision [12].

What might be true for the US must not necessarily be true for the more secular Europe. Research has just started in European countries which addresses physicians' spiritual/religious convictions, and how these may influence their practice of medicine.

We thus intended to analyse (1) which aspects of spirituality are of relevance for medical doctors in a mostly secular society and (2) whether and how these spiritual/religious attitudes are related to specific views of illness, their dealing with patients' individual situation, and finally physicians' life satisfaction. In particular, we intended to know whether physicians with a specific focus on complementary and alternative medicine (CAM) approaches differ from conventional physicians. For this purpose, we decided to choose a more open approach to address a wide variety of important aspects of spirituality, both religious and secular forms.

2. Materials and Methods

2.1. Participants. In this anonymous survey, we enrolled 237 medical doctors recruited via the university's network of family practitioners, in different hospitals and wards with which medical students were in contact (convenience sample with a response rate of 59%). Because we intended to compare physicians with a specific focus on complementary and alternative medicine (CAM) approaches with conventional physicians, we specifically recruited physicians also in hospitals known to offer CAM treatments on the one hand, and physicians in conventional hospitals and wards.

All were assured of confidentiality, consented to participate, and completed the questionnaire, which neither requested names nor initials, by themselves. We had neither inclusion nor exclusion criteria (just the will to participate).

2.2. Measures

2.2.1. Aspects of Spirituality. To measure a wide variety of important aspects of spirituality beyond conventional conceptual boundaries, we developed a questionnaire on the basis of the answers of expert representatives of various spiritual orientations which aspects of spirituality are relevant to them (i.e., Catholics, Protestants, members of the Anthroposophic "Christengemeinschaft", Bahá'í, Muslims, Jews, Buddhists, and atheists) [13]. We condensed the identified motifs to 40 items of the original ASP questionnaire [14] which primarily differentiates 7 factors (Cronbach's alpha = .94), that is, *prayer, trust in God, and shelter*; *insight, awareness, and wisdom*; *transcendence conviction*; *compassion, generosity, and patience*; *conscious interactions*; *gratitude, reverence, and respect*; and *equanimity*. For this analysis, we used a shortened version with 25 items (ASP 2.1) which differentiates 6 factors [15], that is,

(1) *religious orientation* (9 items; alpha = .93), that is, praying, feeling guided and sheltered, trust in and turn to God, spiritual orientation in life, distinct rituals, reading spiritual/religious books, and so forth,

(2) *search for insight/wisdom* (7 items, alpha = .88) with two subconstructs:

  (i) *aspiring beauty/insight* (4 items; alpha = .76), that is, developing wisdom, aspiring to insight and truth, aspiring to beauty and goodness, and aspiring to broad awareness,

  (ii) *quest orientation* (3 items; alpha = .76), that is, life is a search and question for answers, search for deep insight in fabric of life, and achieve of frankness/wideness of the spirit;

(3) *conscious interactions* (5 items, alpha = .83) with two sub-constructs:

  (i) *conscious interaction* (3 items, alpha = .75), that is, with others, self, and environment,

  (ii) *compassion/generosity* (2 items, alpha = .63), that is, developing compassion and practicing generosity;

(4) *transcendence conviction* (4 items, alpha = .85), that is, belief in the existence of higher beings, rebirth of man/soul, soul origins in "higher" dimensions, and man is a spiritual being.

All items were scored on a 5-point scale from disagreement to agreement (0—does not apply at all; 1—does not truly apply; 2—does not know (neither yes nor no); 3—applies quite a bit; 4—applies very much). The scores are referred to a 100% level (4 "applied very much" = 100%).

Table 1: Demographic and psychometric data of 237 medical doctors.

Mean age (mean: years)	45.7 ± 9.6
Gender (%)	
Male	58
Female	42
Family status (%)	
Married	68
Living with partner	13
Divorced	8
Single	11
Denomination (%)	
Christians	79
Other	5
None	16
Academic grade (%)	
Professor	3
Doctor	61
Diploma	36
Physician status (%)	
Assistant physician (hospital)	32
Senior physician (hospital)	22
Registered doctor	44
Specialisation (%)	
CAM (naturopathy, TCM, and homeopathy)	20
Anthroposophic medicine (AM)	19
Psychotherapy	12
None/conventional	50
Life satisfaction (mean: 0–100)	77.4 ± 12.8

2.2.2. Life Satisfaction. Life satisfaction was measured with the *Brief Multidimensional Life Satisfaction Scale* (BMLSS) [16] which refers to the Huebner's "Brief Multidimensional Students' Life Satisfaction Scale" [17, 18]. The eight items of the BMLSS address intrinsic dimensions (*Myself*, *Overall life*), social dimensions (*Friendships*, *Family life*), external dimensions (*School situation*, *Where I live*), and the prospective dimension (*Financial situation*, *Future prospects*). The internal consistency of the instrument was good (Cronbach's alpha = .87) [16]. Each item was introduced by the phrase "I would describe my satisfaction with . . ." and scored on a 7-point scale from dissatisfaction to satisfaction (0—terrible; 1—unhappy; 2—mostly dissatisfied; 3—mixed (about equally satisfied and dissatisfied); 4—mostly satisfied; 5—pleased; 6—delighted). The BMLSS sum score was referred to a 100% level ("delighted").

Single Items Addressing Physicians' Dealing with Their Patients and Meaning of Illness. To address physicians' self-perceived dealing with their patients' individual situation and their view about how illness may impact patients' life in terms of "meaning," we used 10 single statements (see [19]), that is, Item SK1 "whether a patient may see any meaning in illness and life or not is not of importance for the process of recovery," Item SK2 "to me, it is completely incomprehensible that illness may have a biographical meaning in the life of man," Item SK3 "illness is nothing more than a meaningless interruption of the course of life," Item SK4 "illness prevents patients' individual development," Item SK5 reverse "illness is a chance to deal more consciously with life," Item SK9 "I have no time to busy myself with patients' individual situation," Item SK10 "if I had also to deal with patients' individual situation, it would unnecessarily cost time and nerves," Item SK6 "whether a patient may understand the profound causes of illness or not is irrelevant for the process of recovery," Item SK8 "often it is simply a matter of fate or chance whether a patient becomes healthy again or not," and Item ÄS18 "for diagnosis and finding of an adequate treatment, patients' own opinion about what may have caused their illness is not of importance."

All items were scored on a 5-point scale from disagreement to agreement (0—does not apply at all; 1—does not truly apply; 2—does not know (neither yes nor no); 3—applies quite a bit; 4—applies very much).

2.3. Statistical Analyses. Descriptive and analyses of variance and first-order correlations and regression analyses were computed with SPSS 20.0. Given the exploratory character of this study, significance level was set at $P < 0.05$ when mean scores were compared and at $P < 0.01$ when correlations between the respective variables were analysed. With respect to classifying the strength of the observed correlations, we regarded $r > .5$ as a strong correlation, an r between .3 and .5 as a moderate correlation, an r between .2 and .3 as a weak correlation, and $r < .2$ as no or a negligible correlation.

3. Results

3.1. Demographic Results. Among the 237 medical doctors with a mean age of 45.7 ± 9.6, 58% were male and 42% female, 81% were living with a partner and 19% alone, and a Christian denomination was predominating (Table 1).

With respect to their academic status, 61% had a doctoral graduation, 3% had a postdoctoral lecture qualification, and 36% had a medical diploma. As shown in Table 1, 44% were registered doctors and 54% working in a hospital (32% as assistant physicians and 22% as senior physicians). Among them, 29% were working in the field of general medicine, 25% internal medicine, 13% surgery/orthopaedic, 8% gynaecology, 7% anaesthesia, and 6% paediatrics. Their life satisfaction was high (Table 1).

3.2. Aspects of Spirituality in Medical Doctors. The highest spirituality scores were found for *conscious interactions* and *compassion/generosity*, followed by *aspiring beauty/wisdom*, *quest orientation*, and *transcendence convictions*, while *religious orientation* had the lowest scores indicating indecisiveness (Table 2).

Nevertheless, the physicians are active in specific religious activities; that is, 47% are praying for others (46% not, 7% undecided), and 37% are praying for themselves (54% not, 9% undecided); 46% are reading spiritual

Table 2: Aspects of spirituality (main scales and respective subscales) in physicians.

	Religious orientation	Quest orientation	Aspiring beauty/wisdom	Conscious interactions	Compassion/generosity	Transcendence conviction
	Action/emotion	Action (intention)	Action/intention	Action	Intention	Cognition
All physicians						
Mean	49.2	74.7	75.0	83.4	81.6	66.6
SD	25.5	20.6	18.0	14.2	15.0	27.5
Gender						
Female						
Mean	51.07	75.86	76.72	86.25	83.25	68.34
SD	27.22	22.42	18.40	13.18	14.64	26.00
Male						
Mean	48.16	74.04	74.00	81.60	80.56	65.37
SD	27.89	19.67	17.80	14.58	15.01	28.50
F value	0.6	0.4	1.3	**6.2**	1.9	0.7
P value	n.s.	n.s.	n.s.	**0.013**	n.s.	n.s.
Specialisation						
CAM						
Mean	43.61	72.87	72.07	89.72	82.98	60.90
SD	31.58	22.75	18.79	11.55	16.37	29.67
AM						
Mean	67.91	87.10	86.41	88.29	88.10	92.56
SD	17.68	12.24	12.08	11.50	12.33	15.01
Psychotherapy						
Mean	45.50	81.09	78.53	83.33	84.62	61.30
SD	28.63	15.91	16.65	16.83	17.43	25.74
None/conventional						
Mean	45.94	69.65	71.37	79.38	78.23	60.97
SD	25.95	21.50	18.10	14.22	14.10	25.38
F-value	**8.6**	**9.0**	**8.7**	**8.6**	**5.3**	**18.4**
P-value	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**	**0.001**	**<0.0001**

Scores > 50% indicate a positive attitude, while scores < 50 indicate a rejection or disagreement.

texts/scriptures (37% not, 7% undecided), and 32% are meditating (58% not, 10% undecided).

Women had significantly higher scores only for *conscious interactions* (Table 2), while all other ASP scores did not significantly differ (Table 2). Moreover, aspects of spirituality did not differ with respect to the age (categories 25–40 years, 41–50 years, 51–69 years; F values range from 0.3 to 2.1; n.s.) or family status (F values range from 0.2 to 2.2; n.s.). Those with a Christian denomination had significantly higher scores for *religious orientation* ($F = 33.7$; $P < 0.0001$), *transcendence conviction* ($F = 30.5$; $P < 0.0001$), *aspiring beauty/wisdom* ($F = 7.0$: $P = 0.001$), and *quest orientation* ($F = 4.1$; $P = 0.017$), and in trend also for *compassion/generosity* ($F = 2.4$; $P = 0.091$), but not for *conscious interactions* ($F = 0.0$; n.s.).

Also the academic grade had no significant impact on the spirituality scores (F values range from 0.0 to 1.3; n.s.). However, within the field of the medical profession, *religious orientation* ($F = 2.4$; $P = 0.024$) and also *transcendence conviction* ($F = 2.1$; $P = 0.043$) showed significant differences, which could be explained in part by the underlying specialisations (i.e., complementary medicine and anthroposophic medicine versus conventional medicine).

3.2.1. Meaning of Illness and Dealing with Patients' Individual Situation. As shown in Table 3, most medical doctors would clearly reject the statement that "it is not of importance for the process of recovery whether a patient may see any meaning in his illness and life or not" (Item SK1), that it is "completely incomprehensible that illness may have a biographical meaning" (SK2), that "illness is nothing more than a useless interruption of the course of life" (SK3), and that "illness prevents patients' individual development" (SK4), while most would agree that "illness is a chance to deal more consciously with life" (SK5). These 5 items form a unique factor with good internal consistence (Cronbach's alpha = .81) termed "illness as a meaningless interruption" (with inversely coded item SK5) which would explain 57% of variance and can be used in further analyses.

Table 3: Meaning of illness and physicians' dealing with patients' individual situation with respect to professional specialisation.

		Agreement/disagreement (%)			Professional specialisation (means ± SD)				
		Yes (applies quite a bit; applies very much)	Undecided	No (does not apply at all; does not truly apply)	CAM	AM	Psychotherapists	None/ conventional	*F* value (*P* value)
	Illness as a meaningless interruption (*Sum scores, range 0–100*)	—	—	—	14.7 ± 14.5	7.5 ± 9.6	10.0 ± 11.7	19.5 ± 17.4	**7.8 (<0.001)**
	Meaning of Illness (range 0–4)								
SK1	Whether a patient my see any meaning in illness and life or not is not of importance for the process of recovery	4	6	90	0.77 ± 0.81	0.43 ± 0.63	0.52 ± 0.77	0.75 ± 0.86	2.1 (0.095)
SK2	To me it is completely incomprehensible that illness may have a biographical meaning in life of man	4	4	92	0.55 ± 0.88	0.17 ± 0.66	0.32 ± 0.63	0.57 ± 0.87	3.0 (0.033)
SK3	Illness is nothing more than a meaningless interruption of life's course	4	8	88	0.43 ± 0.69	0.05 ± 0.31	0.16 ± 0.37	0.74 ± 0.95	**10.3 (<0.001)**
SK4	Illness prevents patients' individual development	7	11	82	0.52 ± 0.62	0.14 ± 0.35	0.40 ± 0.58	1.04 ± 1.09	**13.7 (<0.001)**
SK5	Illness is a chance to deal more consciously with life	92	4	4	3.34 ± 0.76	3.29 ± 0.84	3.40 ± 0.71	3.20 ± 0.78	0.7 (n.s.)
	Dealing with patients' individual situation (range 0–4)								
SK9	I have no time to busy myself with patients' individual situation	23	10	67	1.19 ± 1.25	1.43 ± 1.15	1.12 ± 1.20	1.45 ± 1.15	0.9 (n.s.)
SK10	If I had also to deal with patients' individual situation, it would unnecessarily cost time and nerves	7	5	88	0.57 ± 1.04	0.69 ± 0.90	0.44 ± 0.71	0.85 ± 0.91	2.0 (n.s.)
SK6	Whether a patient may understand the profound causes of illness or not is irrelevant for the process of recovery	**7**	10	83	0.78 ± 0.70	0.85 ± 0.88	0.52 ± 0.77	0.94 ± 0.93	1.7 (n.s.)
SK8	Often it is simply a matter of fate or chance whether a patient becomes healthy again or not	27	28	45	1.47 ± 1.28	1.90 ± 1.11	1.68 ± 1.14	1.68 ± 1.11	1.0 (n.s.)
ÄS18	For diagnosis and finding an adequate treatment, patients' own opinion about what may have caused their illness is not of importance	10	13	67	1.09 ± 1.15	0.88 ± 0.86	0.59 ± 0.97	1.03 ± 0.98	1.7 (n.s.)

Five further statements address physicians' dealing with the individual situation of their patients. Here, the responses were less clear-cut (Table 3). While most would disagree that they have "no time to become busy with patients' individual situation" (SK9: 67% disagreement), 23% agreed and 10% were unclear. However, the strict statement "if I had also to deal with patients' individual situation, it would unnecessarily cost time and nerves" (SK10) was rejected by 88% (7% agreement, 8% undecided). This means that most clearly intend to address patients' individual situation and regard it as essential.

In line with this, most rejected the statement "whether a patient may understand the profound causes of illness or not is irrelevant for the process of recovery" (SK6: 83% rejection), while the statement that "patients' own opinion about what may have caused their illness is not of importance for diagnosis and finding an adequate treatment" (ÄS18) was commented positively by a minority of physicians (10% agreement, 67% rejection, and 13% undecided). This means that most have an implicit perception that patients' individual perspectives should be included in the process of diagnosis and treatment. However, the more fatalistic statement that it is often "a matter of fate or chance whether a patient becomes healthy again or not" (SK8) showed the strongest variance; that is, 45% rejected this statement, while 27% agreed, and 28% were undecided.

Particularly medical doctors with a specialisation in AM and psychotherapy rejected the statement that "illness is nothing more than a useless interruption of the course of life" (SK3) more strictly than conventional physicians. Due to their specific spiritual orientation and worldview, AM doctors clearly rejected the statement that "illness prevents patients' individual development" (SK4) or that it is "completely incomprehensible that illness may have a biographical meaning" (SK2); conventional physicians would reject these statements too but in a less clear-cut manner.

All other statements did not show significant differences with respect to medical doctors' professional specialisation or underlying orientation (Table 3).

3.3. Associations between Aspects of Spirituality, Life Satisfaction, and Specific Statements. Next we intended to analyse associations between aspects of spirituality, life satisfaction, and statements towards illness, treatment and recovery (Tables 4 and 5).

Aspects of spirituality were strongly interconnected, particularly *transcendence conviction* and *religious orientation* and the scales *conscious interactions* and *search for insight/wisdom* with their subconstructs. Interestingly, *conscious interactions* and *religious orientation* were only weakly associated. However, life satisfaction was associated weakly and negatively only with *conscious interactions* and *aspiring beauty/wisdom* (Table 4), but with none of the other aspects of spirituality. Partial correlations with the variable CAM specification are presented in Table 5.

All aspects of spirituality were inversely related to the negative statements that "illness prevents patients' individual development" (SK4) and that "illness is nothing more than a useless interruption of course of life" (SK3). The opposite statement that illness "may have a biographical meaning" (SK2) was thus positively associated particularly with *conscious interactions* and *compassion/generosity* and just weakly with the other aspects of spirituality (Table 4). The respective factor "Illness as a Meaningless Interruption" thus correlated moderately and negatively with the specific aspects of spirituality, particularly with transcendence conviction (Table 4).

The specific statements addressing physicians' dealing with their patients' individual situation were in most cases either not at all or only weakly associated with their spirituality. However, particularly the strict statement "if I had also to deal with patients' individual situation, it would unnecessarily cost time and nerves" (SK10) was negatively associated with the relational forms of spirituality (i.e., *conscious interactions*). Of particular interest, there were no significant correlations between physicians' specific aspects of spirituality and the conviction that patients' process of recovery is a matter of fate or chance (SK8) and the time physicians' think they have to invest in their patients' individual situation (SK9).

4. Discussion

Among the recruited medical doctors, particularly secular and relational forms of spirituality were of relevance (i.e., *conscious interactions* and *compassion/generosity*), while the more specific religious forms were of the lowest relevance. This is in line with the findings among adolescents/young adults with a high-school education in secular society such as that of Germany [15], also in patients with chronic diseases, engagement in religious practices was the lowest when compared to secular forms of practice [20, 21].

Of specific interest was the fact that particularly physicians with an unconventional specialisation in CAM and AM had significantly higher score on the different aspects of spirituality when compared to physicians with either no or conventional specialisations. Thus, one could suggest that this unique fact may have (1) either an influence on the way they care for their patients and (2) how they would interpret illness and its impact on patients' course of life.

While the majority of physicians regard illness as a patients' chance to deal more consciously with life (92%), and only a minority would have a negative or indecisive perception of illness (up to 18%), it was of interest that the specific aspects of spirituality were negatively correlated with the view of "illness as a meaningless interruption" of life. This means that physicians with a spiritual attitude would see illness also as a chance for an "individual development" and associated with a "biographical meaning" rather than just a "useless interruption" of life which was rejected by 88%. However, particularly those with an AM background rejected the point of view that "illness is nothing more than a meaningless interruption of life's course" and that "illness prevents patients' individual development" very strongly. This strict and unique point of view can be explained by the conviction that illness and other forms of hardship in life can (but do not have to) be "tasks in life," the experience of

Table 4: Intercorrelations of aspects of spirituality in medical doctors.

	Religious orientation	Quest orientation	Aspiring beauty/wisdom	Conscious interactions	Compassion/generosity	Transcendence conviction
Aspects of spirituality						
Religious orientation		.473**	.486**	.169**	.291**	.743**
Quest orientation			.693**	.449**	.424**	.557**
Aspiring beauty/insight				.365**	.402**	.515**
Conscious interactions					.531**	.291**
Compassion/generosity						.347**
Life satisfaction (Sum Score)	.139	.083	.230**	.271**	.126	.040
Illness as a meaningless interruption (sum score)	−.304**	−.332**	−.259**	−.399**	−.381**	−.406**
Meaning of illness						
Item SK1 "whether a patient my see any meaning in illness and life or not is not of importance for the process of recovery"	−.185**	−.179**	−.123	−.273**	−.280**	−.189**
Item SK2 "to me it is completely incomprehensible that illness may have a biographical meaning in life of man"	−.237**	−.262**	−.240**	−.347**	−.361**	−.292**
Item SK3 "illness is nothing more than a meaningless interruption of life's course"	−.258**	−.376**	−.301**	−.387**	−.392**	−.409**
Item SK4 "illness prevents patients' individual development"	−.314**	−.395**	−.334**	−.386**	−.375**	−.461**
Item SK5 reverse "illness is a chance to deal more consciously with life"	−.223**	−.254**	−.178**	−.279**	−.240**	−.290**
Dealing with patients' individual situation						
Item SK9 "I have no time to busy myself with patients' individual situation"	−.035	−.087	−.112	−.156	−.060	−.027
Item SK10 "If I had also to deal with patients' individual situation, it would unnecessarily cost time and nerves"	−.084	−.200**	−.184**	−.332**	−.225**	−.153
Item SK6 "whether a patient may understand the profound causes of illness or not, is irrelevant for the process of recovery"	−.088	−.251**	−.128	−.213**	−.256**	−.123
Item SK8 "often it is simply a matter of fate or chance whether a patient becomes healthy again or not."	.154	−.031	.046	−.123	−.159	.046
Item ÄS18 "for diagnosis and finding an adequate treatment, patients' own opinion about what may have caused their illness is not of importance"	−.204**	−.210**	−.134	−.237**	−.183**	−.160

** $P < 0.01$ (Spearman rho).

Table 5: Intercorrelations of aspects of spirituality in medical doctors (partial correlation analysis).

Controlled for "CAM specialization"	Religious orientation	Quest orientation	Aspiring beauty/wisdom	Conscious interactions	Compassion/generosity	Transcendence conviction
Aspects of spirituality						
Religious orientation		.497	.497	.200	.317	.779
Quest orientation			.720	.462	.400	.586
Aspiring beauty/insight				.344	.372	.529
Conscious interactions					.545	.303
Compassion/generosity						.341
Life satisfaction (sum score)	.164	.113	.213	.268	.125	.075
Illness as a meaningless interruption (sum score)	−.291	−.401	−.300	−.429	−.408	−.405

** $P < 0.01$ (partial correlation; controlled for CAM specialization yes/no).

which may even contribute to the inner development of an individual [22].

With respect to the physicians' perception how they think they are dealing with patients' individual situation, only the relational and existential forms of secular spirituality were negatively and only weakly associated with the cynical statement that dealing with patients' individual situation "would unnecessarily cost time and nerves" and that patients' individual points of view in regard of the suggested causes of illness "is irrelevant for the process of recovery". With respect to these patient-oriented views, physicians with a CAM or AM specialisation and those with a conventional specialisation did not differ significantly.

While psychosomatic medicine has already called for a medical ethos of physicians which overcomes the so-called value neutrality of the 19th century (see [23], 597ff.), more recent German textbooks on "good doctors" and "good medical care" either plea for a basic philosophical attitude of the physician committed to respect the otherness of the other [24] or to put the human person into the center of any medical practice [25]. Religious bases or spiritual aspects are only marginally alluded to or remain implicit. There is an evident shyness regarding explicit religious or spiritual elements which may be essential to physicians' professional identity and fulfilment [26] or which, however, might influence medical decisions and behaviour. This is probably due to religion and spirituality dealing with transcendent realities and thus transcending the borders of normal scientific, evidence-based, science on which modern health care is thought to be based [27]. This is—to some extent—different in the field of palliative medicine and care, also due to the explicit mention of spiritual aspects in the 2002 WHO-definition. Data of Geiss and Belschner [28] indicate that transpersonal trust is an important resource for German medical doctors working in palliative/intensive care units, senior residential homes, and hospices. Although most of the physicians analysed herein were working in a conventional medical context and not in palliative care units, adequate communication and interest in patients' concerns should not be restricted to patients with severe handicaps, cancer, or hospices.

The development of "spiritual care," in consequence, is still mainly restricted to the end of life medicine [29, 30], although first steps are being taken to go beyond and acknowledge the empirically tested relevance of spiritual and religious needs, values, and attitudes of both patients and clinical staff in other fields of medicine like psychiatry and psychotherapies [31] and chronic illnesses [32].

However, a limitation of the study is the fact that the data are not representative for German physicians. This was not our intention because we aimed to oversample medical doctors with a specific specialisation in CAM (including AM) to compare their data with conventional medical doctors. Moreover, we are aware that particularly the items addressing the suggested meaning of illness may be answered with social desirability, and thus the focus of attention should be on the undecided and those who agreed to the respective statement (8–18%). The same is true for two items addressing their perceptions and how they deal with patients' individual situation (i.e., items SK6 and SK10 with positive and undecided answers in 12–17%).

5. Conclusion

While the physicians with a specific CAM or AM specialisation differ from their conventional counterparts with respect to specific aspects of spirituality, the specific views associated with these specialisations were only weakly to moderately associated with their view on the meaning of illness and how they assume that they would deal with their patients' individual situation. On the other hand, physicians' spirituality was either not at all or only weakly associated with their life satisfaction, particularly their conscious interactions with others, self, and environment (which is not a specific religious issue), and their aspiration to develop wisdom, insight and truth, beauty and goodness, and broad awareness is of relevance (which is at least moderately associated with a religious orientation). Nevertheless, it was of interest that the specific aspects of spirituality were negatively correlated with the view of "illness as a meaningless interruption" of life, indicating that physicians with a spiritual attitude would see illness also as a chance for an "individual development" and

associated with a "biographical meaning" rather than just a "useless interruption" of life.

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Research Article

Spiritual Dryness as a Measure of a Specific Spiritual Crisis in Catholic Priests: Associations with Symptoms of Burnout and Distress

Arndt Büssing,[1,2] Andreas Günther,[3] Klaus Baumann,[4,5] Eckhard Frick,[6] and Christoph Jacobs[3]

[1] *Quality of Life, Spirituality and Coping, Institute for Integrative Medicine, Faculty of Health, Witten/Herdecke University, Gerhard-Kienle-Weg 4, 58239 Herdecke, Germany*
[2] *External Senior Research Fellow Freiburg Institute for Advanced Studies (FRIAS), University of Freiburg, 79104 Freiburg, Germany*
[3] *Pastoral Psychology and Sociology, Faculty of Theology Paderborn, Kamp 6, 33098 Paderborn, Germany*
[4] *Caritas Science and Christian Social Work, Faculty of Theology, Albert-Ludwigs University, Platz der Universität 3, 79098 Freiburg, Germany*
[5] *Internal Senior Research Fellow Freiburg Institute for Advanced Studies (FRIAS), University of Freiburg, 79104 Freiburg, Germany*
[6] *Munich School of Philosophy & Professorship of Spiritual Care, University of Munich, Marchioninistraße 15, 81377 Munich, Germany*

Correspondence should be addressed to Arndt Büssing; arndt.buessing@uni-wh.de

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Spirituality/religiosity is recognized as a resource to cope with burdening life events and chronic illness. However, less is known about the consequences of the lack of positive spiritual feelings. Spiritual dryness in clergy has been described as spiritual lethargy, a lack of vibrant spiritual encounter with God, and an absence of spiritual resources, such as spiritual renewal practices. To operationalize experiences of "spiritual dryness" in terms of a specific spiritual crisis, we have developed the "spiritual dryness scale" (SDS). Here, we describe the validation of the instrument which was applied among other standardized questionnaires in a sample of 425 Catholic priests who professionally care for the spiritual sake of others. Feelings of "spiritual dryness" were experienced occasionally by up to 40%, often or even regularly by up to 13%. These experiences can explain 44% of variance in daily spiritual experiences, 30% in depressive symptoms, 22% in perceived stress, 20% in emotional exhaustion, 19% in work engagement, and 21% of variance of ascribed importance of religious activity. The SDS-5 can be used as a specific measure of spiritual crisis with good reliability and validity in further studies.

1. Introduction

Religion and spirituality have become a matter of empirical research in various contexts since the last 30 years. Various operationalizations have been proposed considering various aspects of spirituality [1, 2]. There is an increasing number of studies indicating relations between spirituality/religiosity and health (reviewed by [3]). Although results are not always consistent (reviewed by [4]) and often dependant on specific populations, cultures, and specific measures [5], many studies found positive associations between specific facets of spirituality and psychological well-being (reviewed by [6, 7]), quality of life (reviewed by [8]), and coping (reviewed by [9]). A systematic review on the "potential beneficial or harmful effects of religious/spiritual coping" indicated that this specific form of coping may be beneficial to "maintaining self-esteem, providing a sense of meaning and purpose, giving emotional comfort and providing a sense of hope" [10].

However, less is known about the consequences of the lack of positive spiritual feelings, although it is an often reported phenomenon. Those who care for others, either as health care professionals or spiritual advisors and priests, may experience phases of crisis which can be due to external factors, that is, work overload, structural changes in the work

processes, conflict with colleagues, low credit by superiors, and so forth, and also due to internal factors, that is, psychological traits and capacities, own resources to rely on, and so forth. These factors may have an impact on professional "functioning," resulting either in positive work engagement and dedication on the one hand [11], or burnout and reduced life satisfaction on the other hand [12]. As a consequence it is to expect that spiritual life and fulfilment will be affected too either in a positive or negative way. In fact, first findings among protestant pastors show that higher spirituality was related to healthier work-related behaviour patterns [13]. But what about spiritual feelings of those who professionally care for the spiritual side of others, what about chaplains and priests who are suggested to have an active spiritual life?

Although controversially discussed, Mother Teresa (Agnes Gonxha Bojaxhiu, 1910–1997), one of the blessed of Catholic Church, is recognized as a very sacrificial and devoted nun working for the sick in the slums of Calcutta (India). Receiving the Nobel Peace Prize for her work in 1979, she inspired several, both lay persons and ordained, to minister to the poor, sick, and dying all over the world. However, after she has passed away, and during the process of beatification, the world started to recognize her statements of spiritual "dryness," "darkness," and "loneliness" [14]. In September 1979, she said to Rev. Michael Van Der Peet: "Jesus has a very special love for you. As for me, the silence and the emptiness is so great that I look and do not see, listen and do not hear" [14]. This and other statements indicate long-lasting phases (or even states) of spiritual crisis even in those who are suggested to be filled with strong faith. These phases can be either a complete detachment (in terms of loss of faith) or part of spiritual growth as described as "dark night of the soul" by the Spanish 16th century mystic and Carmelite friar John of the Cross (San Juan de la Cruz, 1542–1591). Another Spanish 16th century mystic, St. Ignatius of Loyola, suggested practical rules for discernment of spirits, aiming at understanding times of consolation and desolation in a human being's life trajectory. Ignatius describes desolation as "darkness of soul, disturbance in it, movement to things low and earthly, the unquiet of different agitations and temptations, moving to want of confidence, without hope, without love, when one finds oneself all lazy, tepid, sad, and as if separated from his Creator and Lord" (Spiritual Exercises no. 317).

So far no research has been done to study systematically the lack of positive spiritual feelings. Yet many spiritual men and women refer to such feelings as a form of absence of God and a lack of spiritual comfort as illustrated by the example of Mother Theresa. Thus, we intended to establish a psychological construct that seizes these feelings of spiritual bereavement and dryness and analysed their relations with personal characteristics, situational factors, and effects for psychological health and to analyse predictors of such specific feelings.

2. Hypothesis

We hypothesized that the feelings of spiritual dryness and bereavement are associated with distress, depressive symptoms and burnout, decreased work engagement, less self-rated psychological health, and finally reduced overall life satisfaction. Personal characteristics such as pessimism, low sense of coherence, and low self-efficacy as well as occupational factors as work burden, missing appreciation by superiors, low autonomy, and work stress are supposed to lead to an impairment of positive spiritual feelings and thus can aggravate phases of spiritual crisis or even the sensation of abandonment by God. Further, for the sake of construct validity, spiritual dryness should be negatively associated to positive spiritual experiences, the self-ascribed importance, and amount of spiritual practices.

Thus, the aim of this study is to demonstrate first results for the validation of the new construct "spiritual dryness" and present empirical evidence of the expected associations.

3. Methods

3.1. Participants. All individuals of this anonymously conducted cross-sectional study were informed about the purpose of the study, were assured of confidentiality and their right to withdraw at any time, and asked to provide informed consent. They were recruited among Catholic priests of a huge German diocese (i.e., Paderborn).

The priests were informed about the study by the personnel manager of the dioceses and invited by a separate letter from the authors to participate in the study. Participation was possible by pencil and paper version or online questionnaire.

425 out of 998 persons compiled the questionnaire, which means a participation rate of 43%. Among the respondents, 297 answered the print version (70%), and 128 preferred the online form (30%). Elderly priests favoured the print version. Most worked as parish priests ($n = 241$; 124 with leadership function, 86 with cooperative function, 31 as chaplains), 30 in the field of pastoral counselling, 116 were already retired (out of whom 84 still assisted in a parish), and 29 had other duties and responsibilities (academic and management). The priests' mean age was 58 years. The distributions of age and occupational tasks were representative for the diocese.

3.2. Measures

3.2.1. Spiritual Dryness Scale. We intended to operationalize and make measurable feelings of "spiritual dryness." These phases of spiritual crisis are in most cases transient, and thus we asked for the general experience rather than for acute phases of putative burnout and/or depression. We assume that these feelings can be aggravated by work burden, personal traits, and lack of own spiritual engagement.

The intended instrument consists of two parts. First, items to measure whether or not individuals already have experienced such phases of "spiritual dryness", feelings that God is distant, that one's prayers go unanswered, to be "spiritually empty" or not being able to give any more (both in terms of a spiritual exhaustion), and finally feelings to be abandoned by God. The second part of the instrument addresses reactions towards these experiences, that is, whether one has found ways to deal with these feelings (the individual strategies can

be added as free texts), whether these feelings inspire one all the more to help others, and whether or not individuals have experienced greater spiritual serenity and depth after these phases.

The specific items refer to statements found in the testimony of Mother Teresa's experiences of spiritual "dryness," "darkness," and "loneliness" [14]. The items of this instrument were formulated in such a way that they fit to daily life experiences of religious individuals, either lays or ordained. Response options were "not at all" (1), "rarely" (2), "occasionally" (3), "fairly often" (4), and "regularly" (5).

3.2.2. Burnout. To measure burnout, we used the Maslach Burnout Inventory (MBI) which has three subscales [15]. The emotional exhaustion subscale ($\alpha = .90$) measures feelings of emotional overextension and exhaustion by one's work; the depersonalization subscale ($\alpha = .79$) measures an "unfeeling and impersonal response" towards recipients; while the personal accomplishment subscale ($\alpha = .71$) measures feelings of competence and successful achievement in one's work with others.

Specific items are, for example, "I feel emotionally drained from my work," "Working with people all day is really a strain for me," "I feel used up at the end of the workday," "Working with people directly puts too much stress on me", and so forth. All items are scored on a 7-point scale ranging from (experienced) "never" to "every day."

3.2.3. Psychological Distress. To measure psychological distress, Derogatis [16] developed the 18-item brief symptom inventory (BSI-18), a short form of the symptom check list (SCL-90-R). This instrument has three scales with 6 items each, that is, somatization, depression and anxiety.

Specific items are feelings of worthlessness, loneliness, and being down, no interest in things, hopelessness about future, pains in heart and chest, nausea or upset stomach, nervousness, restlessness, scared for no reason, spells of terror or panic.

The German version has good reliability coefficients for the respective subscales (i.e., somatization: $\alpha = .79$; depression: $\alpha = .84$; anxiety: $\alpha = .84$) [17]. All perceptions are scored on a 5-point Likert scale ranging from "not at all" to "very strong."

3.2.4. Perceived Stress Scale. The perceived stress scale (PSS) is a 10-item questionnaire to measure the self-perceived stress level in specific situations during the last month [18]. Internal reliability of the original PSS-10 was moderate ($\alpha = .78$) [18]. In our sample reliability was good ($\alpha = .87$).

Specific items are been upset because of something that happened unexpectedly, felt unable to control the important things in life, felt confident about ability to handle personal problems, been angered because of things that happened that were outside of control, could not cope with all the things that one had to do, and so forth.

All items refer to emotions and thoughts and how often one may have felt or thought a certain way. The scores range from 1 (never) to 4 (very often); higher scores would thus indicate greater stress.

3.2.5. Life Orientation. To measure optimistic and pessimistic attitudes, we used the 10-item revised life orientation test (LOT-R) [19]. Internal consistency of the respective subscales with 3 items each (and 4 filling items) is rather weak, that is, optimism: $\alpha = .69$; pessimism: $\alpha = .68$).

Representative items are "In uncertain times, I usually expect the best," "If something can go wrong for me, it will," "I'm always optimistic about my future," "I rarely count on good things happening to me." All items are scored on a 5-point scale ranging from "agree a lot" to "disagree a lot."

3.2.6. Sense of Coherence. The sense of coherence scale (SOC) is widely used to assess internal strengths of an individual referring to Antonovsky's "salutogentic orientation" [20]. According to theory, this sense of coherence may determine a person's coping with stressors in life.

Antonovsky primarily developed a 29-item instrument with a putatively one-dimensional structure [20]. For this study, we used the 13-item version of the SOC with 7-point semantic differential; these scales intend to measure comprehensibility (5 items), manageability (4 items), and meaningfulness (4 items). However, there is currently a debate about the factorial structure of the instrument which is highly inconsistent depending on the tested samples. Jakobsson [21] recently tested the construct validity of the 13-item version and reported that the "instrument failed to show acceptable construct validity in any of the tests or in any age group" and that "factor analyses did not support the factor structure proposed by Antonovsky." Thus, for this analysis we will refer only to the SOC-13 sum score.

Representative items are "Do you have the feeling that you really do not care about what is going on around you?," "Has it happened that people whom you counted on disappointed you?," "Until now your life has had: no clear goals—very clear goals and purpose," "Do you have the feeling that you are in an unfamiliar situation and do not know what to do?," "Does it happen that you experience feelings that you would rather not have to endure?," "How often do you have the feeling that there is little meaning in the things you do in your daily life?," and so forth.

3.2.7. General Self-Efficacy. To assess individuals' self-efficacy, we used the german language general self-efficacy scale (GSE) [22]. The GSE scale has a good to very good internal consistence, that is, Cronbach's alpha in German samples ranging from .80 to .90 [23].

Specific items are "If someone opposes me, I can find means and ways to get what I want," "When I am confronted with a problem, I can usually find several solutions," "I am confident that I could deal efficiently with unexpected events," "No matter what comes my way, I am usually able to handle it." The 10 items are answered on a 4-point Likert scale ranging from disagreement to agreement. High scores indicate higher (optimistic) self-efficacy.

3.2.8. Work Engagement. The utrecht work engagement scale (UWES) measures "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" [24]. For this study, we used the 9-item shortened version (UWES-9; alpha ranging between .85 and .92) which has similar psychometric properties than the long version. It has been shown that work engagement is negatively associated with burnout [25] and positively related to work and life satisfaction and self-rated health [24].

Specific items are "I am enthusiastic about my job," "At my work, I feel bursting with energy," "At my job, I feel strong and vigorous," "I am proud of the work that I do," "I am immersed in my work," and so forth. The items are scored on a 7-point Likert scale, ranging from "never" to "always/every day."

3.2.9. Satisfaction with Life. To measure life satisfaction we relied on the German version of Diener's satisfaction with life scale (SWLS) [26]. This 5-item scale (α = .92) uses general phrasings such as "In most ways my life is close to my ideal," "The conditions of my life are excellent," "I am satisfied with my life," "So far I have gotten the important things I want in my life," and "If I could live my life over, I would change almost nothing" [26].

The extend of respondents' agreement or disagreement is indicated on a 7-point Likert scale, ranging from "strongly agree" to "strongly disagree."

3.2.10. Daily Spiritual Experiences. The instrument was developed as a measure of a person's perception of the transcendent in daily life, and thus the items measure experience rather than particular beliefs or behaviors [27, 28]. Here we used the 6-item version of the daily spiritual experience scale (DSES; α = .91) which uses specific items such as feel God's presence, God's love, desire to be closer to God (union), find strength/comfort in God, and touched by beauty of creation [27].

The response categories are "many times a day," "every day," "most days," "some days," "once in a while" and "never/almost never."

3.2.11. Importance of Specific Spiritual Practices/Activities. To differentiate various forms of specific spiritual practices, we used the SpREUK-P questionnaire [29, 30]. The generic instrument was designed to measure the engagement in organized and private religious, spiritual, existential, and philosophical practices. In its 24-item version it differentiates 5 factors: (1) religious practices (α = .84; i.e., praying, church attendance, religious events, religious symbols, etc.); (2) existential practices (α = .83; i.e., self-realization, spiritual development, meaning in life, etc.); (3) humanistic practices (α = .76; i.e., help others, consider their needs, do good, connectedness, etc.); (4) spiritual (mind body) practices (α = .80; i.e., meditation, rituals, reading spiritual/religious books, etc.); and (5) gratitude/reverence (α = .76; i.e., feeling of gratitude, reverence, experience beauty in nature).

With respect to the specific sample, we adjusted some items; that is, we used the term "Holy Communion" instead of "church attendance", performance of distinct rituals from "other religious traditions", differentiated meditation as "in the style of Buddhist traditions" or "Christian style;" moreover, we added one item specific for Catholic priests, that is, "liturgy of hours."

This specific version of the instrument used here asks for the *importance* of these activities (SpREUK-P Ipt) and scores the responses as "not at all," "somewhat," "very," and "indispensable." These scores referred to a 100% level ("indispensable" = 100%; transformed scale score), which reflects the degree of ascribed importance of the respective practices/activities in their life.

Within this sample of Catholic priests, the 20 items of the SpREUK-P Ipt have a good internal consistency (α = .84) and make up 5-6 factors which are consistent with the primary scales: (1) religious practices with two sub-scales, that is, active religious practices (α = .78) and passive religious practices (α = .56); (2) existential practices (α = .75); (3) humanistic practices (α = .78); (4) eastern forms of spiritual practices (α = .62); (5) gratitude/reverence (α = .83). Particularly the 2-item subscale passive religious practices has a weak internal reliability; these two items are observed so far only in this distinct population and should thus not be overestimated.

3.3. Statistical Analyses. Descriptive statistics, internal consistency (Cronbach's coefficient α), and factor analyses (principal component analysis using Varimax rotation with Kaiser's normalization), as well as analyses of variance, first order correlations, and regression analyses were computed with SPSS 20.0. Structural equation modelling was accomplished with SPSS Amos 20.0.

Given the exploratory character of this study, significance level was set at $P < .05$.

With respect to classifying the strength of the observed correlations, we regarded $r > .5$ as a strong correlation, an r between .3 and .5 as a moderate correlation, an r between .2 and .3 as a weak correlation, and $r < .2$ as no or a negligible correlation.

4. Results

4.1. Participants. All priests had a high school education; the majority were between 40 to 60 years of age (Table 1). Most were living alone, only 6.4% in a fraternity. Further characteristics are given in Table 1.

The overall psychological distress (BSI) of the priests must be regarded as elevated (mean = .53, SD = .52; population mean = .22 [31]), while burnout values were in the range of the normal. About 10% of the sample exceeded cut-offs in all three scales of emotional exhaustion, depersonalisation, and reduced personal fulfilment and therefore has to be considered to be compromised by burnout. In confront to the normal population, the sample showed slightly decreased values of sense of coherence (SOC) and considerably lower values of general self-efficacy (GSE). On the contrary, self-reported social support was very high. Work engagement has to be considered on average. The overall life satisfaction was markedly higher (mean = 7.5) than mean values of the population

Table 1: Characteristics of 425 Catholic priests.

Variables	%*
Age categories (born between) (%)	
1980 and 1989	3
1970 and 1979	14
1960 and 1969	28
1950 and 1959	16
1940 and 1949	11
1930 and 1939	22
1920 and 1929	7
Living situation (%)	
Alone	40.2
Alone but with external housekeeper	28.2
With housekeeper	16.6
With other priests	6.5
With others (i.e., family)	3.4
Other living facilities	5.1
Duration of work (%)	
<10 h per week	5
10–20 h per week	11
20–30 h per week	7
30–40 h per week	9
40–50 h per week	26
50–60 h per week	28
60–70 h per week	12
Work engagement (UWES) (mean ± SD, range)	4.1 ± 1.1 (1–7)
Health associated and personal variables (mean ± SD, range)	
Distress (BSI)—general severity index	9.5 ± 9.5 (0–58)
Body mass index (BMI) (normal range)	27.4 ± 4.5 [20–25]
Perceived stress (PSS)	20.1 ± 6.9 (1–40)
Burnout (MBI)—emotional exhaustion	17.3 ± 10.8 (0–50)
Burnout (MBI)—depersonalization	5.3 ± 5.4 (0–25)
Burnout (MBI)—personal accomplishment	32.8 ± 9.8 (0–48)
Life satisfaction (SWLS)	26.0 ± 6.1 (5–35)
Life orientation (LOT-R)-optimism	3.8 ± 0.8 (1–5)
Life orientation (LOT-R)-pessimism	2.4 ± 0.8 (1–5)
Self-efficacy (GES)	26.7 ± 5.7 (3–40)
Sense of coherence (SOC)	62.9 ± 10.0 (26–86)
Spiritual engagement (mean ± SD, range)	
Daily spiritual experiences (DSEs)	4.0 ± 0.9 (1–6)
Importance of active religious practices (SpREUK-P Ipt)	61.8 ± 18.3 (0–100)
Importance of gratitude/awe (SpREUK-P Ipt)	70.1 ± 21.6 (0–100)
Importance of passive religious activities (SpREUK-P Ipt)	64.9 ± 21.1 (0–100)
Importance of eastern spiritual practices (SpREUK-P Ipt)	8.8 ± 15.1 (0–78)
Importance of existential activities (SpREUK-P Ipt)	63.9 ± 20.8 (0–100)
Importance of humanistic activities (SpREUK-P Ipt)	69.4 ± 15.5 (25–100)

*The relative proportions were referred to the number of respondents.

of North-Rhine-Westphalia where the study was performed (mean = 7.0 [32]).

4.2. Response Rates to the Respective Experiences of Spiritual Dryness. As shown in Table 2, feelings of spiritual dryness or spiritual emptiness are experienced occasionally by up to 40%, often or even regularly by up to 13%, while the explicit feelings that God is distant or to be abandoned by God were experienced often only by 4–7%, and not at all by 35% and 53%, respectively. This means that spiritual dryness may occur occasionally as a phase of spiritual crisis.

About 60% responded to the items that address concrete actions when these phases were experienced (Table 2). Referring to these respondents, 57% stated that they have found ways to deal with these feelings and 15% rarely or not at all (9% of the whole sample). These feelings inspired 28% of the respondents all the more to help others, while for 37% these feelings were not transformed into concrete actions to help others (22% of the whole sample stated "rarely" or "not at all"); in 35% this reaction occurred occasionally. Greater spiritual serenity and depth were experienced by 33% of the respondents, while 25% did not; in 42% this experience occurred occasionally.

4.3. Reliability and Factor Analysis of the Spiritual Dryness Scale. The first 6 items dealing with the concrete experience of these phases of spiritual dryness can be condensed to a *spiritual dryness scale* (SDS) which showed good internal consistency (Cronbach's alpha = .87) (Table 3). The item difficulty (1.31[mean value]/4) was .33; with the exception of the item addressing feelings to be abandoned by God (indicating a bottom effect due to the lack of regular experience), all values were in the acceptable range from .20 to .80.

Factor analysis revealed a Kaiser-Meyer-Olkin value of .84, which as a measure for the degree of common variance indicates its suitability for statistical investigation by means of principal component factor analysis. Exploratory factor analysis pointed to one main factor (eigenvalue = 3.6) which accounted for 60.2% of variance (Table 2).

Structural equation modelling proved a good fit of a unidimensional solution with model fit characteristics of χ^2 [df = 9, $N = 425$] = 96.918, $P < .001$, CFI = .92, AIC = 120.918, and SRMR = .049 (Figure 1(a)). The lowest factor loading was observed for item 6 ("I know the feeling of not being able to give any more") with $r = .56$, while the other 5 items ranged from $r = .72$ to .84. This might be due to the wording of

Table 2: Response rates (%).

Item phrasings	Not at all	Rarely	Occasionally	Fairly often	Regularly	No reply
Item 1: I have the feeling that God is distant from me, regardless of my efforts to draw close to him.	35	38	20	6	1	<1
Item 2: I have the feeling that God has abandoned me completely.	53	29	14	4	<1	<1
Item 3: I experience times of "spiritual dryness."	5	35	46	10	3	<1
Item 4: I have the feeling that I am "spiritually empty."	17	40	30	9	3	<1
Item 5: I have the feeling that my prayers go unanswered.	17	38	34	9	1	1
Item 6: I know the feeling of not being able to give any more.	9	37	38	13	3	<1
Marker items when these feelings were experienced						
Item 7: These feelings inspire me all the more to help others.	8	14	21	14	2	41
Item 8: I have found ways to deal with these feelings.	3	6	16	25	8	41
Item 9: After these phases of "spiritual dryness" or "abandonment by God," I experience a greater spiritual serenity and depth.	5	10	26	16	4	39

Table 3: Mean values and reliability analysis of the spiritual dryness scale.

Item phrasings	Mean ± SD [0–4]	Item difficulty index (=0.33)	Corrected item-scale correlation	α if item deleted (α = .867)	Factor loading
Item 1: I have the feeling that God is distant from me, regardless of my efforts to draw close to him.	1.00 ± 0.94	0.25	.733	.831	.838
Item 2: I have the feeling that God has abandoned me completely.	0.69 ± 0.86	0.17	.681	.842	.793
Item 3: I experience times of "spiritual dryness."	1.70 ± 0.83	0.43	.680	.842	.792
Item 4: I have the feeling that I am "spiritually empty."	1.41 ± 0.99	0.35	.685	.841	.791
Item 5: I have the feeling that my prayers go unanswered.	1.39 ± 0.92	0.35	.659	.845	.768
Item 6: I know the feeling of not being able to give any more.	1.64 ± 0.94	0.41	.553	.864	.660
Marker items when these feelings were experienced					
Item 7: These feelings inspire me all the more to help others.	1.82 ± 1.07	0.46	—	—	—
Item 8: I have found ways to deal with these feelings.	2.50 ± 1.03	0.63	—	—	—
Item 9: After these phases of "spiritual dryness" or "abandonment by God," I experience a greater spiritual serenity and depth.	3.05 ± 1.02	0.76	—	—	—

Extraction of the main components (eigenvalue > 1). Varimax rotation with Kaiser's normalization. One factor explains 60% of variance.

the item with no explicit regard to God or spiritual life. Thus model fit could be improved omitting item 6. The unidimensional 5-item scale proved a very good fit with fit characteristics of χ^2 [df = 5, N = 425] = 48.133, P < .001, CFI = .96, AIC = 68.133, and SRMR = .040 (Figure 1(b)). So SEM recommends to omit item 6.

For all further analyses we will thus refer to the 5-item version of the SDS (SDS-5) which lacks item 6.

4.4. Correlation and Regression Analyses. To assess convergent validity of the SDS-5, we performed correlation analyses. As can be expected from a theoretical point of view, the SDS-5 correlated strongly with depressive symptoms and moderately with burnout (MBI), perceived stress (PSS), and pessimism (LOT-R) on the one hand, and strongly negative with daily spiritual experiences (DSEs), moderately negative with sense of coherence (SOC), life satisfaction (SWLS), self-efficacy (GSE), optimism (LOT-R), work engagement (UWES), and with active religious practices (SpREUK-P) and gratitude/awe (SpREUK-P) on the other hand (Table 4). In contrast, there were no significant associations with hours of work, size of the parish/pastoral unit or team size (Table 4); moreover, there was no significant association with age (data not shown).

With respect to criterion validity, we performed regression analyses to assess the variance of health related variables on the one hand, and spiritual experience on the other hand, which can be attributed to the experience of spiritual dryness. As shown in Table 5, the experience of spiritual dryness can explain variance in mental health affections, work engagement, and spiritual activities, that is, 44% of variance in daily spiritual experiences (DSEs), 30% of variance in depressive symptoms, 22% of variance in perceived stress (PSS), 20% of variance in emotional exhaustion (MBI), 19% of variance in work engagement (UWES), and 21% of the importance of active religious activity.

4.5. Predictors of "Spiritual Dryness". Because several variables were empirically observed which might have an impact on the experience of spiritual dryness, we performed multiple regression analyses (stepwise exclusion). The strongest predictor of spiritual dryness was low daily spiritual experiences,

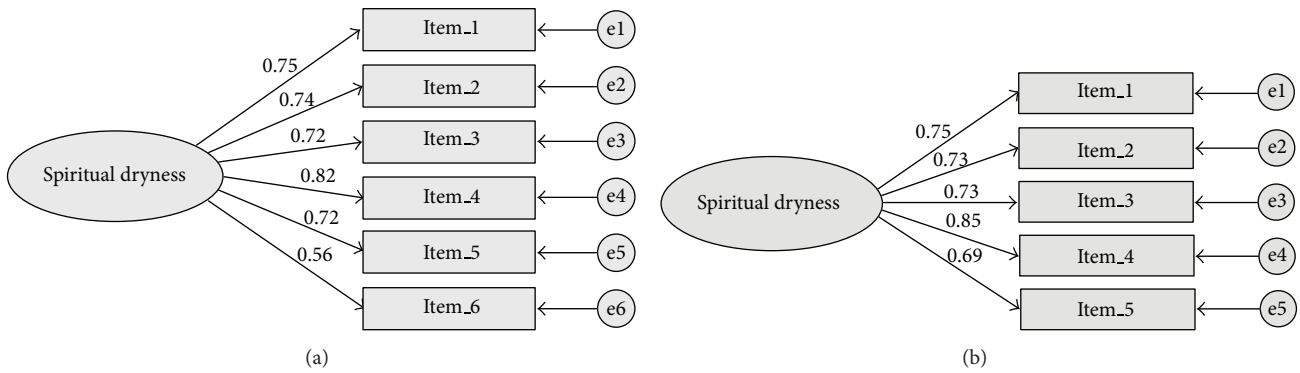

Figure 1: (a) SEM of SDS-6 with standardized factor loadings. (b) SEM of SDS-5 with standardized factor loadings.

Table 4: Correlation analyses.

	Spiritual dryness scale (SDS-5)
Daily spiritual experiences (DSEs)	*−.660***
Importance of specific spiritual practices (SpREUK-P Ipt)	
Active religious practices	**−.453****
Gratitude/awe	**−.399****
Passive religious activities	−.263**
Eastern spiritual practices	−.099
Existential activities	−.124
Humanistic activities	−.203**
Health status	
Burnout—emotional exhaustion (MBI)	**.464****
Burnout—depersonalization (MBI)	**.450****
Burnout—personal accomplishment (MBI)	**.441****
Distress—somatization (BSI)	−.261**
Distress—depression (BSI)	*.544***
Distress—anxiety (BSI)	**.387****
Personal variables	
Age	−.010
Self-efficacy—sum (GSE)	**−.305****
Life orientation—optimism (LOT-R)	**−.414****
Life orientation—pessimism (LOT-R)	**.336****
Satisfaction with life (SWLS)	**−.434****
Sense of coherence—sum score (SOC)	**−.483****
Work situation	
Duration of work per week	.057
Size of parish/pastoral unit	−.049
Team size	.081
Work engagement (UWES)	**−.438****
Perceived stress (PSS)	**.466****

* $P < .01$ (Pearson).

followed by depressive symptoms and perceived stress, and as a further negatively associated predictor the importance of active religious activities (Table 6). These variables explain 55% of SDS variance.

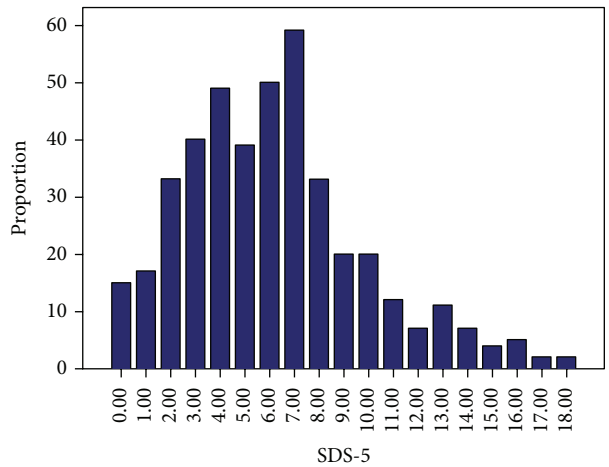

Figure 2: Distribution of SDS scores within the sample (range 0–20).

As the regression coefficients may be compromised by collinearity, we checked the variance inflation factor (VIF) as an indicator for collinearity. A VIF higher than 10 is indicative for high collinearity. Results suggested that collinearity was not a problem in the respective models. However, in several cases the VIF values ranged up to 1.7 indicating very low but tolerable collinearity in the data.

4.6. Mean SDS Scores within the Sample. The SDS-5 sum scores (range 0–20) showed a left skewed Gaussian distribution (Figure 2). The mean score was 6.2 ± 3.7; the 33% percentile was at 4.0 and the 67% percentile at 7.0.

As shown in Table 7, the SDS-5 score of individuals with high emotional exhaustion differs significantly from those with low scores ($F = 48.6$; $P < .0001$). Similarly, individuals with perceived stress have significantly higher scores than those without ($F = 35.5$; $P < .0001$). In contrast, individuals with low daily spiritual activities had significantly higher SDS scores than those with moderate or high activity scores ($F = 111.5$; $P < .0001$). Thus, so far one could assume SDS-5 scores <5 as unremarkable, scores between 5 and 9 as moderate, and scores ≥10 as high. Following this preliminary categorization, 36% of the tested priests were unsuspicious of spiritual crisis, 47% had moderate SDS scores, and 16% high scores.

Table 5: SDS-5 as predictor of health related variables and spiritual activities.

SDS as predictor of dependent variables, that is,	R^2	β	T	P
Depression (BSI)	.30	.544	13.27	<.0001
Perceived stress (PSS)	.22	.466	10.71	<.0001
Emotional exhaustion (MBI)	.20	.450	10.05	<.0001
Life orientation—pessimism (LOT-R)	.11	.336	.729	<.0001
Sense of coherence (SOC)	.23	−.483	−11.33	<.0001
Work engagement (UWES)	.19	−.438	−9.96	<.0001
Daily spiritual experiences (DSEs)	.44	−.660	−18.01	<.0001
Importance of active religious activity (SpREUK-P Ipt)	.21	−.453	−10.41	<.0001

Table 6: Predictors of SDS-5 (stepwise regression analysis).

Model 4: R^2 = .55	β	T	P	Tolerance	VIF
(constant)		13.794	.000		
Daily spiritual experiences (DSEs)	−.471	−11.218	.000	.679	1.473
Depression (BSI)	.235	5.170	.000	.577	1.732
Perceived stress scale (PSS)	.148	3.386	.001	.629	1.589
Importance of active religious activity (SpREUK-P Ipt)	−.083	−2.006	.046	.705	1.418

Variables with lacking influence in this model: burnout, sense of coherence, self-efficacy, optimism, and work engagement.

Table 7: SDS-5 mean values in individuals with burnout and stress symptoms.

	SDS-5 (mean ± SD)
Emotional exhaustion (MBI) scores	
<15 (48% low)	5.0 ± 3.0
15–21 (21% moderate)	5.6 ± 3.0
>21 (31% high)	8.4 ± 4.2
F value	48.6
P value	<.0001
Perceived stress (PSS) scores	
<17 (29% absent)	4.4 ± 2.8
17–23 (43% low)	5.9 ± 3.2
24–28 (16% moderate)	7.5 ± 3.3
>28 (12% high)	9.7 ± 4.4
F value	35.5
P value	<.0001
Daily spiritual experiences scale (SDES) scores	
<3 (11% low)	11.4 ± 3.9
3–4.9 (72% moderate)	6.1 ± 2.9
≥5 (17% high)	3.1 ± 2.4
F value	111.5
P value	<.0001

5. Discussion

It was our intention to operationalize feelings of spiritual dryness as a specific measure of spiritual crisis. The resulting 5-item instrument, the SDS-5 scale, has sound psychometric properties, and the findings are congruent with the underlying hypotheses. In fact, we were able to show that "spiritual dryness" is strongly negatively associated with engagement in spiritual activities on the one hand, and positively with variables of distress and character traits on the other hand. Yet there were no significant associations with duration of work during the week, with size of parish/pastoral unit or team size, instead negatively with fulfilling work engagement. Thus, so far we have hints about which variables may contribute or facilitate such phases of spiritual crisis, which finally will impact life satisfaction. A survey of male Anglican priests showed that theological orientations such as liberal versus conservative ("churchmanship") were strongly associated with clergy satisfaction [33]. US American Catholic priests' vocational satisfaction was found to comprise three factors: External manifestations (e.g., preaching, teaching), internal manifestations (e.g., prayer life, affirmation of God's call), and social manifestations (e.g., relationships with parishioners, appreciation from others) [34].

Although high SDS-5 scores were associated with depressive symptoms and burnout symptoms, they are not necessarily an indicator of affected mental health, as they can simply reflect a transient spiritual crisis one has to deal with. Future analyses have to clarify how long such phases may last (this will also include analyses of test-retest reliability) and which individuals need support to cope with these phases. Our data indicate that in Catholic priests, low spiritual activities and low importance of active religious activities can be predictors of such spiritual dryness. However, it is currently unclear whether reduced spiritual activity is the result of such spiritual crises or one of the conditions. Nevertheless, one cannot ignore that these phases go hand in hand with emotional exhaustion [35], depressive symptoms, and perceived stress; yet, most seem to find strategies to deal with these phases. In fact, 60% of the tested individuals responded to the second part of the questionnaire and thus stated that they already have experienced such phases of spiritual dryness. Among them, 9% stated that they did not find ways to deal with these feelings, while 33% did fairly often or even regularly.

Moreover, several priests were inspired by these phases all the more to help others (22%), or these phases finally resulted in greater spiritual serenity and depth (20%), indicating a spiritual transformation of such experiences.

Spiritual traditions of all major religions understand spiritual life and transformation as a journey which is not easy, smooth, and automatic but a pilgrimage of self-transcendence implying temptations and fatigue, struggles, and discouragements. This is also true for the Christian tradition: self-transcendence inherent to love of God and neighbour is challenging the person both in her or his prayer life, relationship to self and others, as well as work or ministry. Love of God and love of neighbour are understood as belonging together in intimate union and interrelation. Due to the human condition of self-transcendence which implies decisions and renunciations with their intrinsic tensions, such union and interrelation is not taken for granted, but rather an object of illusions about the dynamic meanings of joy and fatigue: joy may show truly or only apparently what is good and true, and fatigue may show truly or only apparently that one is on the wrong track. So, on has to state progressive and regressive spiritual processes which lead ahead or astray on the journey of faith.

For Catholic priests, who professionally care for the spiritual sake of others, their prayer life as well as ministry may be experienced as sources of joy and trust which energize the personal and communitarian spiritual journey. Prayer life and ministry may also become annoying or boring, aloof, and even tedious for the priests at some points or periods of their spiritual journey. Such experiences may be regarded as necessary parts of perseverance on the journey and inspire their empathy and solidarity with persons in spiritual turmoil; they may also, in an opposite way, reduce their readiness for ministry and even lead to leaving their vocation [36].

So far we have to state that Catholic priests do know the experience of "helpless helper," when their own spiritual activities ironically seem to be fruitless, resulting in phases of burnout and distress [35, 37]. Then the required confidence in their own spiritual resources needs to be rediscovered and reassured. Which strategies were used by the individuals investigated herein remain to be analysed in the next steps of the study.

Further research should investigate the causal relationship of personal, spiritual, and health interconnections and carve out more clearly the causal antecedents and effects of spiritual dryness. Also the transitory character of spiritual dryness needs further attention. Which circumstances and personal characteristics contribute to overcome a spiritual crisis and which lead to an aggravation and perpetuation of this state of crisis? Are there any characteristics of the person or the environment which may predict the positive or negative development of a spiritual crisis?

Interconnected with this question, the stability of feelings of spiritual crisis should be inquired. As for many religious people this is a transient state of mind; even very gifted religious man and women report this as a very stable experience that lasted for many years of their lives. Narratives of religious people witness that these experiences led negatively either to an increasing desolation with even depressive symptoms and in a final step to the loss of faith in God or positively to various efforts to overcome these negative feelings often ensued by a deepened sense of peace, consolation, and closeness to God. The "night of faith" is to be understood as an ambivalent phenomenon leading to spiritual growth or the alienation from God [38]. Thus, it might be hypothesized that short phases of spiritual crisis may have even positive effects of purification and deeper faith, while long-lasting phases of spiritual dryness have negative consequences for the individual resulting in hopelessness and spiritual distress.

6. Conclusion

Compared to the measures of depressive symptoms, burnout, and perceived stress, the SDS measures a different construct. So far, data indicate adequate reliability and validity; moreover, the predictors of spiritual dryness are sound from a theoretical point of view, and thus the instrument can be used as a specific measure of spiritual crisis in specific populations; these studies are currently under way. It is so far striking that this specific spiritual crisis is experienced by a relatively large number of priests which in most cases did find strategies to deal with such crisis.

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