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RELEVANCE OF RELIGION AND SPIRITUALITY IN GERMAN PATIENTS WITH CHRONIC DISEASES

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ABSTRACT

Objective: Many American patients depend on religion to cope, but less is known about the spiritual/religious (SpR) characteristics of medical patients in Europe, a more secular environment. We examined self-categorizations of SpR (spiritual, religious, both, neither), patients' search for meaningful support, trust in higher source, positive interpretation of disease, and support in relations of life through SpR, as measured with the SpREUK questionnaire, in German medical patients. *Method:* We analyzed data on 710 West-German patients with a mean age of 54. Forty-two percent had chronic pain diseases, 25% cancer, 10% multiple sclerosis, 21% other chronic diseases, and 3% acute diseases. *Results:* The general interest in search for meaningful support was moderate. Trust in a higher source and support in life through SpR were rated higher, while almost all patients had a positive interpretation of their diseases, i.e, hint to change life. The interest in SpR issues was highest in cancer patients and lowest in patients with multiple sclerosis. Univariate analyses confirmed that the SpR self-categorization was the strongest predictor of all four factors, while trust in a higher source was also affected by religious affiliation and age. Positive interpretations of disease correlated well with search for meaningful support. *Conclusions:* Patients with chronic

diseases differ with respect to their SpR self-categorizations and may thus utilize different aspects of SpR. Cancer patients, in particular, often depend on their trust in a higher power and in conventional religious activities to help them to cope with their illness.

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Key Words: religion and medicine, spirituality, chronic diseases, cancer, humans, patients

INTRODUCTION

Much research suggests that religious/spiritual involvement is associated with improved coping with medical illness, better mental health in general, less functional disability, and better physical health [1]. A number of studies have also examined the associations between religion/spirituality, coping and mental health in Germany [2-6], but few studies have been conducted in German patients with severe or chronic medical illness [6-12]. In the United States, close to 90% of medical inpatients over age 60 depend on religion to cope [13], and those patients are less depressed and seem to cope better [14]. Even when religious medical patients become depressed, they recover more quickly from depression over time, and these effects are greater in those with chronic health problems [15].

Less is known about the religious and spiritual characteristics of medical patients in Germany, who may differ from those in the United States where an interest in religion may be higher than in Europe. German medical patients may be less interested in religion or spirituality, or may use it differently than patients in the United States. If there are more non-religious patients among Germans with severe or chronic illness, how do these patients cope without religion and what can be done to help them address existential concerns related to meaning, purpose, and hope, that are brought on by serious or chronic medical illness?

Early studies of Wittkowski and Baumgartner [2] investigated the relationship between fear respectively acceptance of dying and death, and various demographic data, religiosity, and life satisfaction in German individuals, while Schwab and Petersen [3] examined the concepts of wrathful respectively helpful God and correlated it to loneliness in different ways. Siegrist [4] investigated the influence of religion on attitudes toward suicide and found that church attendance and Catholicism decreased support for suicide. A psychological approach was found also in a recent study of Albani et al. [5]. They analyzed religion as a potential protective factor regarding body complaints in an elderly population and reported that women had higher scores on religiosity than men and in elderly from Western Germany compared to those from Eastern Germany. But there were no significant correlations between religiosity and body complaints. In German breast cancer patients, Zwingmann et al. [12] investigated positive and negative components of religious coping, depressive coping, and active problem-focused

coping and psychosocial adjustment. They found that the relationship between religious coping and psychosocial outcomes was completely mediated by nonreligious coping, whereby only depressive coping and not active problem-focused coping proved to be a mediating variable.

Nevertheless there is as yet but limited understanding of how patients with chronic diseases themselves view the impact of spirituality/religiosity (SpR) on their health and well-being, and whether they are convinced that spirituality may offer some beneficial effects. Moreover, none of the former German studies accounted for the fact that several patients turn away from institutional religiosity, but may have an interest in a more individual spiritual approach [7, 8]. To investigate this field and to explore those relationships, our working group has developed the SpREUK questionnaire (SpREUK is an acronym of the German translation of "Spiritual and Religious Attitudes in Dealing with Illness") which appears to be a good choice for assessing a patient's interest in spiritual concerns which is not biased for or against a particular religious commitment, and consequently avoids exclusive terms such as God, Jesus, praying, church, etc. [8, 10, 11, 16, 17]. To avoid an intermix of attitudes and convictions with the frequency of a SpR engagement, various forms of SpR practices such as conventional religious, unconventional spiritual, reflecting, philosophical, humanistic, and nature-oriented practices can be measured with an independent additional instrument, the SpEUK-P questionnaire [11, 17].

Using these questionnaires, we not only confirmed previous results of Albani et al. [5] that women had significantly higher scores on religiosity (i.e., trust in external guidance), but also found that they are also much more in search for meaningful support, regard their SpR as a strong support of life, and have a stronger positive interpretation of disease (i.e., illness as a reappraisal) than male patients [10, 11, 16]. Moreover, female cancer patients were convinced that finding access to a spiritual source has a positive influence on their illness, that illness has meaning, and they regard illness as a chance for their own development and as a hint to change life [9]. In a recent study we reported that the main relevant adaptive coping strategies of chronic disease patients were "Search for information and medical help" and "Positive arrangement of life," while "Religious support" was less important [11].

In this article, we: 1) examine self-categorizations by German patients in terms of religious-spiritual; 2) explore SpREUK subscale scores distributions across different illness conditions, such as cancer, multiple sclerosis, chronic pain diseases and other chronic diseases, and different spiritual categorizations; and 3) determine correlations between SpREUK subscale scores and spiritual-religious practices. The purpose is to identify the diversity of religious/spiritual interests across German medical patients and sensitize medical physicians to the fact that many German patients with chronic or life-threatening disease have spiritual and religious needs that should be addressed as part of their medical care. We focused on the question which patients regard SpR as helpful in their life, are in search of a

spiritual source, have ground and trust, and are convinced that their illness can be regarded as a reappraisal, a hint to behave differently, to change life ("message of disease"). This is important particularly to address unclear SpR needs of patients which are known to turn away from institutional religiosity—although spirituality is not absent.

MATERIALS AND METHODS

Participants

In this cross-sectional survey we analyzed 710 patients with different chronic diseases. They were recruited at the tumor out-patient clinic, the multiple sclerosis out-patient clinic, the pain out-patient clinic of the Communal Hospital in Herdecke, the Department of Internal and Integrative Medicine at the Essen-Mitte Clinics, a medical ward in Wuppertal, and some other medical centers in Germany. All patients were informed of the purpose of the study, were assured of confidentiality, gave informed consent to participate, and completed the anonymized questionnaire by themselves. To minimize the bias of a "sample of convenience," different medical centers in West Germany were chosen, and patients were recruited consecutively as they attended the respective clinics. Because we intended to have a more complete picture, we had neither inclusion nor exclusion criteria.

Most patients were female, were married or live with a partner, and had a Christian affiliation. Forty-two percent had chronic pain diseases (fibromyalgia, polyarthritis, arthrosis, back pain, migraine, etc.), 25% cancer (breast cancer, prostate cancer, colorectal tumors, etc.), 10% Multiple Sclerosis, 21% other chronic diseases (inflammatory bowel diseases, diabetes, hypertension, asthma, etc.), and 3% acute diseases. These acute patients were rated in the "all patients" group of the Table 1, but not accounted for one of the chronic disease samples. All demographic details were given in Table 1.

Measures and Statistical Analysis

The SpREUK questionnaire was designed specifically for assessing SpR beliefs, attitudes of medical patients with a wide range of religious, spiritual, or no beliefs [6-11]. We thus primarily did not follow distinct concepts of SpR primarily, but relied on essential motifs found in counseling interviews with chronic disease patients (i.e., trust/faith, source/hold, message/change). In addition to questions about self-categorizations of religious-spiritual, there are four subscales that measure the "Search for meaningful support," "Trust in higher source," "Positive interpretation of disease" (reappraisal; it is possible to interpret illness as an

Table 1. Demographic Data of Investigated Patients

	Chronic diseases	Chronic pain	Multiple sclerosis	Cancer	All patients*
Number	152	291	69	179	710
Women : men[1]	2.38	5.59	1.65	2.65	3.24
Mean age (years ± *SD*)[2]	50.6 ± 16.3	56.2 ± 14.3	40.5 ± 7.9	57.9 ± 11.3	54.0 ± 14.6
Duration disease (months ± *SD*) [2]	100 ± 111	88 ± 106	82 ± 70	46 ± 61	74 ±92
Educational level[1]					
Secondary education (%)	17	45	32	25	33
Junior high school (%)	28	25	41	25	27
High school education (%)	44	17	20	35	27
Other (%)	12	13	7	15	13
Family status[1]					
Married (%)	45	44	65	70	54
With partner (%)	9	9	17	8	10
Divorced (%)	17	16	8	8	13
Alone (%)	24	12	11	7	13
Widowed (%)	5	19	0	6	10
Religious affiliation					
Christian (%)	67	62	70	62	70
Other (%)	2	3	0	3	3
None (%)	18	12	26	12	15
No answer (%)	13	23	4	0	13
SpR attitude[1]					
R+S+	30	19	16	32	25
R–S–	40	36	36	18	32
R+S–	21	36	41	38	34
R–S+	9	8	7	12	9

Note: *Includes 19 patients with acute diseases. Significant difference between groups: [1]$p < 0.001$ (Pearson's Chi[2] test); [2]$p < 0.001$ (ANOVA).

opportunity, a hint to change life, or to reflect upon what is essential in life), and "Support in relations of life through SpR."

Most items refer explicitly to the patient´s experience with the own illness, which is not shared by healthy individuals. Thus, normative data of the SpREUK scales with respect to healthy individuals are quite problematic. Among a sample of more than 5,000 representative individuals with the AKU questionnaire, an instrument which measures adaptive coping styles [11, 18, 19] and has scales measuring "Trust in God's help" and "Reappraisal: Life as value and Chance" (which correlates with the SpREUK scale Positive interpretation of disease), we found that healthy individuals do not regard illness as a chance for development or as a hint to change life, etc., and thus had highly significant lower scores than patients with chronic diseases, particularly cancer patients.

Therefore, in this study we analyzed cohorts of patients with different chronic diseases and referred to the deviations from the mean SpREUK score respectively variance among the patients with similar experiences.

Distinct forms and frequencies of SpR practices were measured with an additional manual, the SpREUK-P questionnaire, which differentiates spiritual, religious, existentialistic and philosophical practices [11, 17]. As described [10, 11], 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—don't know; 3—applies quite a bit; 4—applies very much). The SpREUK scores are referred to a 100% level (4 "applied very much" = 100%).

Beyond conceptual boundaries, both of our SpREUK instruments were shown to be valid and reliable instruments [10, 11] which differentiate the self-addressed religious and spiritual attitudes of the patients with chronic diseases, heed their search for support and meaning, reliance to an external source, and uniquely integrate the topic of 'meaning of disease' (reappraisal, reinterpretation, i.e., hint to change life and behavior which was found to be associated with SpR [10]).

All data were treated as ordinal data. Each subject's total score, the sum of the scale scores of all items, was used to depict the degree of the respective SpR aspect. Cronbach's coefficient alpha was used to evaluate the reliability of our questionnaire and inter-item correlation, and was published previously [10, 11, 17].

Differences in the given scores were tested using ANOVA. To test the impact of several variables on the sub-scales, we performed analysis of univariate variance (UNIANOVA), differences between the distinct groups were measured with variance analyses (ANOVA) respectively cross tabulations (Pearson´s Chi^2). We judged $p < 0.05$ significant, and $0.05 < p < 0.10$ as a trend. Because for the UNIANOVA analyses Levene's test for equality of variances was significant in all cases, the level of significance should be $p < 0.01$. Given multiple statistical tests, only highly significant p-values ($p < 0.01$) should be regarded as relevant, and thus were highlighted in the tables. All statistical analyses were performed with SPSS for Windows 12.0.

RESULTS

As shown in Table 2, the general interest in Search for meaningful support was moderate in patients with chronic diseases, Trust in higher source, and Support of life (and dealing with illness) through SpR were more attractive, while all patients with chronic diseases had a Positive interpretation of disease (i.e., they reflected it was essential in life, were convinced that illness has meaning, regarded illness as a chance for development and as a hint to change life, etc.). Particularly men had significantly lower scores than women.

We found significant differences with respect to disease. Cancer patients had the highest level for Search for meaningful support, Trust in higher source, and Positive interpretation of disease, while patients with multiple sclerosis had significantly lower scores for Search for meaningful support, Trust in higher source, and Support through SpR. Although they were much younger than the other patients, their interest in Search for meaningful support and Trust in higher source was similarly low as compared to the chronic pain patients which were among the oldest patients. But they had the highest number of individuals without any religious affiliation.

The low scores for Positive interpretation of diseases found in patients with chronic pain diseases (Table 2) could be due to a much longer (and frustrating) history of illness as compared to cancer patients (Table 1), which may have more hope that their aggressive treatment will be effective in the eradication of tumor cells, metastases, etc.

To explain the strong variances of the SpREUK scores, we performed univariate analyses of variance and confirmed that the SpR attitude (religious and spiritual—R+S+; neither religious nor spiritual—R–S–; religious but not spiritual—R+S–; not religious but spiritual—R–S+) is the main relevant variable for all four SpREUK factors (Table 3), while Trust in higher source is also affected by religious affiliation and age. Variables such as gender and educational level had no significant impact (data not shown), while for the product of disease and duration of disease we observed a minor trend with respect to Trust in higher source ($F = 2.398$; $p = 0.031$). Thus, we should focus on the SpR attitude.

A large fraction of patients (32%) regard themselves as neither R–S–, 34% as R+S–, 25% as R+S+, and 9% as R–S+. R+S+ patients had the highest SpREUK scores as compared to the other groups (Table 2), while R–S– had, of course, the lowest. Search for meaningful support was high in patients with a spiritual attitude (R+S+ and R–S+), while Trust in higher source was high in religious patients (R+S+ and R+S–). Positive interpretation of diseases was of some relevance even in R–S–, but of high relevance in patients with a spiritual attitude (R+S+ and R–S+).

SpR Attitudes, SpREUK and Disease

Among the patients with different chronic diseases, we found unique SpR pattern (Table 1). Patients with multiple sclerosis are predominantly R+S– or have

Table 2. SpREUK Scores of Patients with Chronic Diseases

	Search for meaningful support	Trust in higher sources	Positive interpretation of disease	Support in relations of life (and disease) through SpR	Conventional religious practice*
All chronic patients	45.4 ± 26.9	59.9 ± 29.4	63.1 ± 21.5	59.6 ± 23.5	32.5 ± 24.7
Women	46.9 ± 27.5	62.0 ± 28.8	65.0 ± 21.5	61.5 ± 23.5	346 ± 25.0
Men	40.4 ± 24.9	53.0 ± 30.7	57.8 ± 20.5	53.7 ± 23.1	**25.2 ± 22.1**
F-value	5.305	11.672	14.052	10.186	13.906
p-value	0.022	**0.001**	**0.000**	**0.002**	**0.000**
Chronic diseases	46.9 ± 27.1	57.7 ± 32.4	64.6 ± 21.4	64.3 ± 24.2	31.7 ± 26.7
Chronic pain diseases	40.1 ± 27.5	55.1 ± 27.3	56.4 ± 21.3	56.9 ± 25.3	31.56 ± 25.3
Multiple sclerosis	**37.7 ± 22.7**	53.3 ± 32.5	60.3 ± 17.4	**50.6 ± 22.0**	**26.3 ± 20.3**
Cancer	**55.3 ± 24.0**	**70.4 ± 25.8**	71.8 ± 20.1	62.7 ± 21.2	38.1 ± 22.9
F-value	10.877	10.119	17.391	4.793	2.696
p-value	**0.000**	**0.000**	**0.000**	**0.001**	0.031
R+S+	**70.2 ± 19.1**	**82.4 ± 16.6**	**75.1 ± 18.3**	**74.0 ± 14.4**	**49.1 ± 21.9**
R+S–	41.9 ± 22.2	**73.2 ± 20.4**	60.8 ± 19.2	60.7 ± 20.2	**41.4 ± 23.6**
R–S+	**61.3 ± 20.7**	**49.4 ± 22.4**	72.7 ± 19.2	**66.7 ± 15.2**	29.6 ± 20.5
R–S–	**25.1 ± 18.9**	**31.1 ± 21.7**	**53.2 ± 21.4**	**33.2 ±20.8**	**13.0 ± 14.1**
F-value	174.197	261.233	45.353	108.256	97.586
p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Note: Results are means ± standard deviation. Deviations > 15% from the mean of the whole group of patients with chronic diseases were highlighted.

*Results are from the SpREUK-P questionnaire and represent frequency of practice.

Table 3. Univariate Variance Analyses of Patients with Chronic Disease

	Variables	*F*-value	Significance*
(1) Search for meaningful support	Age group	1.143	n.s.
	Family status	0.889	n.s.
	Religious affiliation	0.846	n.s.
	SpR attitude	20.101	**0.000**
	Religious affiliation * SpR attitude	2.853	0.010
(2) Trust in higher source (external guidance)	Age group	3.974	**0.002**
	Family status	1.490	n.s.
	Religious affiliation	6.370	**0.002**
	SpR attitude	28.649	0.000
	Age group * Religious affiliation	2.702	**0.004**
(3) Positive interpretation of disease	Age group	2.077	**n.s.**
	Family status	2.066	**n.s.**
	Religious affiliation	1.215	**n.s.**
	SpR attitude	8.832	**000.0**
	Age group * SpR attitude	2.037	0.012
	Age group * Religious affiliation * SpR attitude	2.311	0.015
(4) Support through SpR	Age group	1.384	n.s.
	Family status	1.092	n.s.
	Religious affiliation	3,317	0.038
	SpR attitude	24.372	**0.000**

Note: *Levene's test for equality of variances was significant in all cases and thus the level of significance should be $p < 0.01$.

no interest (R-S-), while cancer patients are predominantly religious (R+S+ and R+S–). Patients with chronic pain patients have a R+S– and R–S– pattern, similar to the multiple sclerosis patients. The other chronic patients are mainly R–S– (and R+S+). Thus, this SpR pattern cannot be explained by differences in age alone.

We next analyze the SpR pattern in the diseases groups with respect to the SpREUK scores (Table 4). As one may expect, R+S+ patients had the highest scores for all four factors, irrespective of disease.

In contrast, R+S– patients, particularly those with multiple sclerosis and chronic pain diseases, have no interest in Search for meaningful support, but do have Trust in higher source. Particularly R+S– cancer patients have a Positive interpretation of disease, while patients with chronic pain disease do not.

Among the smaller group of R–S+ patients, the patients with cancer and chronic pain diseases have Trust in higher source and a Positive interpretation of disease

Table 4. SpR Attitude Associated Differences between the SpREUK Scores with Respect to Disease

	Search for meaningful support	Trust in higher source	Positive interpretation of disease ("Message")	Support in relations of life (and disease) through SpR
R+S+ (*n* = 172)	70.2 ± 19.1	82.4 ± 16.6	75.1 ± 18.3	74.0 ± 14.4
Chronic diseases (26%)	70.0 ± 19.7	84.8 ± 16.0	73.3 ± 22.0	75.4 ± 16.7
Multiple sclerosis (6%)	64.3 ± 14.8	81.4 ± 16.6	76.1 ± 15.6	68.0 ± 13.0
Cancer (33%)	72.4 ± 19.3	84.4 ± 14.5	77.6 ± 17.9	75.2 ±13.2
Chronic pain diseases (31%)	68.5 ± 19.3	77.1 ± 18.4	72.9 ± 15.9	72.0 ± 14.3
F-value	0.790	3.026	0.873	1.016
p-value	n.s.	0.019	n.s.	n.s.
R+S– (*n* = 237)	41.9 ± 22.2	73.2 ± 20.4	60.8 ± 19.2	60.7 ± 20.2
Chronic diseases (14%)	47.6 ± 20.8	79.2 ± 16.3	61.6 ± 21.2	**74.3 ± 13.0**
Multiple sclerosis (12%)	38.1 ± 20.7	71.9 ± 22.5	61.3 ± 17.3	53.8 ± 21.9
Cancer (29%	**48.8 ± 21.1**	81.1 ± 171	68.9 ± 18.9	61.5 ± 19.2
Chronic pain diseases (42%)	37.1 ± 22.4	65.7 ± 21.2	53.4 ± 16.7	57.9 ± 21.3
F-value	4.139	7.676	8.884	4.092
p-value	**0.003**	**0.000**	**0.000**	**0.003**

R–S+ (*n* = 64)	61.3 ± 20.7	49.4 ± 22.4	72.7 ± 19.2	66.7 ± 15.3
Chronic diseases (20%)	61.8 p 18.6	42.4 ± 25.4	74.0 ± 17.0	67.8 ± 12.9
Multiple Sclerosis (8%)	**30.0 ± 31.2**	**18.7 ± 19.8**	66.5 ± 18.1	56.3 ± 14.7
Cancer (34%)	64.9 ± 14.1	52.2 ± 18.6	75.0 ± 22.0	65.2 ± 16.0
Chronic pain diseases (36%)	65.0 ± 20.4	57.3 ± 19.3	70.9 ± 18.8	69.2 ± 16.1
F-value	3.894	4.137	0.262	0.380
p-value	**0.007**	**0.005**	n.s.	n.s.
R–S– (*n* = 223)	25.2 ± 18.9	31.2 ± 21.7	53.2 ± 21.4	33.4 ± 20.8
Chronic diseases (27%)	26.1 ± 19.0	29.5 ± 22.4	57.3 ± 19.0	32.6 ± 20.1
Multiple sclerosis (11%)	27.2 ± 16.5	27.0 ± 22.4	51.0 ± 12.4	**38.6 ± 19.7**
Cancer (15%)	**32.6 ± 17.7**	**36.5 ± 22.3**	**65.5 ± 22.3**	35.1 ± 18.3
Chronic pain diseases (45%)	21.9 ± 19.3	31.9 ± 21.0	46.9 ± 21.7	**28.3 ± 23.8**
F-value	2.350	0.987	6.175	1.001
p-value	n.s.	n.s.	**0.000**	n.s.

Note: Results are means ± standard Deviations. Deviations > 15% from the mean of the respective group of patients with chronic diseases were highlighted.

(which is high in other chronic patients too). Particularly the multiple sclerosis patients are again not in Search for meaningful support.

What about the large group of R–S– patients? They have of course no interest in Search for meaningful support, Trust in higher source or find Support through SpR, but again the cancer patients value their illness as a positive "message."

Correlation Analyses

We have found that patients with their unique SpR pattern appreciate different aspects of SpR. To clarify the relations between these SpR aspects we next performed correlation analyses.

Support in relations of life through SpR correlated of course strongly with Search for meaningful support and Trust in higher source (Table 5). Positive interpretation of disease correlated well with Search for meaningful support, but to lower extend with Trust in higher source and Support in relations of life through SpR. Thus, regarding disease as a biographical "hint," as an opportunity to change life or to reflect upon what is essential in life can be regarded as a unique feature of spirituality.

Although the interest of patients in Conventional religious practice and Unconventional spiritual (body-mind) practice was found to be low, while the frequency of engagement was high for Humanistic practice and Nature oriented practice (Table 5), nevertheless Trust in higher source and Support in relations of life through SpR both did strongly correlate with the engagement frequency of Conventional religious practice and Gratitude practice. Search for meaningful support correlates strongly with Insight Practice and Unconventional spiritual (body-mind) practice. Positive interpretation of disease correlated best with Existentialistic insight practice.

Thus, although Search for meaningful support and Trust in higher source are strongly associated, the best correlating forms and frequencies of SpR practices revealed distinct profiles and thus both aspects should be differentiated. However, Humanistic practice and Nature oriented practice had only some weak correlations with the SpREUK scales and particularly the Humanistic practice should be regarded as a non-religious/spiritual practice.

DISCUSSION

In this study of over 700 German medical patients with serious and chronic diseases, many patients had spiritual or religious beliefs that were important to them. Over two-thirds of patients indicated that they were spiritual, religious, or both. This was especially true for patients with cancer, where 82% indicated that they were spiritual, religious, or both. Religion is not the same as spirituality, but they are closely linked [20, 21]. Religion involves a distinct set of beliefs and rituals that are practiced as part of a faith community; it usually involves a moral

Table 5. Correlations between the SpREUK Scales and forms of SpR Practices

	Mean score of variable	Search for meaningful support	Trust in higher source	Positive interpretation of disease	Support in relations of life through SpR
SpREUK[1]	45.4 ± 26.9				
Search for meaningful support			**.576****	**.535****	**.698****
Trust in higher source	59.9 ± 29.4			.430**	**.669****
Positive interpretation of disease	63.1 ± 21.5				.488**
SpR practices as measured with the SpREUK-P[1]					
Conventional religious practice	32.7 ± 24.9	.493**	**.676****	.303**	**.662****
Humanistic practice	67.5 ± 18.4	.169**	.169**	.183**	.180**
Existentialistic insight practice	57.9 ± 23.1	**.501****	.386**	**.513****	.391**
Existentialistic development practice	53.0 ± 23.3	.406**	.404**	.366**	.431**
Unconventional spiritual (body-mind) practice	21.7 ± 24.6	**.503****	.330**	.420**	.440**
Gratitude practice	52.6 ± 23.9	.421**	**.610****	.418**	**.522**
Nature oriented practice	6.66 ± 20.4	.340**	.326**	.311**	.395**
Marker items from the SpREUK[2]					
Life is fixed by fate	1.58 ± 1.21	.061	.191**	−.032	.044
Accept illness and bear it calmly	1.64 ± 1.27	.071	.246**	.054	.010

Note: Correlations are significant with **$p < 0.01$ resp. *$p < 0.05$ (2-tailed). Score means ±*SD*: [1]Range: 0-100; [2]Range: 0-4.

code of conduct that governs individual behaviors. Spirituality, on the other hand, is a much broader term than religion. It is less easy to define, more personal, more individualistic, and may or may not include formal involvement in religious practices or a religious community. A recent paper [21] differentiates seven aspects of spirituality, i.e., "Prayer, trust in God and shelter," "Insight, awareness and wisdom," "Transcendence conviction," "Compassion, generosity and patience," "Conscious interactions," "Gratitude, reverence and respect," and "Equanimity."

The conceptualization of spirituality and religiosity which is the basis of our instrument is close to the most common definition of spirituality: to find meaning, purpose and value in life [22]. As described previously, we primarily referred to distinct topics found in the patients we met for example in the tumor out-patient clinic [7-9]. They were in search for hold and connection and in search for meaning. Thus, we conceptualized spirituality as an attitude of search for meaning, and religiosity as an attitude of reference, trust and hold [7, 8].

Several patients argued that they regard their illness as a 'hint' (i.e., by God) to change life, to behave differently, etc. [8]. In fact, a similar interpretation can be found in the Quran (i.e., illness as given by Allah to remember and redirect) or in the Bible (i.e., healing connected with the imperative to chance life, to behave differently). Particularly this subscale was highlighted to be of outstanding importance for patients with life-changing diseases [10], because it is a measure independent of any religion or specific belief. This scale obviously refers to an appraisal coping, but is nevertheless a specifically spiritual issue which is associated with the Meaning domain of Martsolf and Mickley [23], and thus was found to correlate with an Existentialistic insight practice, and strongly with Search for meaningful support (Table 5).

Also the scale Search for meaningful support deals with Martsolf and Mickley's Becoming domain [23], and thus correlates well with Existentialistic insight practice and Unconventional spiritual (body-mind) practice (Table 5), while Trust in external guidance refers to Martsolf and Mickley's Connecting domain and Pargament's "Search for the holy" [24], and thus correlates best with Gratitude practice and a Conventional religious practice (Table 5).

The independent scale Support of life and disease through SpR obviously refers to the spirituality in and spirituality as an opposite to religion, and correlates with Conventional religious practice and Gratitude practice on the one hand, and Unconventional spiritual (body-mind) practice and Existentialistic insight practice on the other.

It is obvious that SpR is a multidimensional construct. Batson et al. [25, 26] described a three-dimensional model of religiosity: Means or external, End or internal, and Quest. Intrinsic religiosity identifies religion as an end in itself. Strong personal convictions, beliefs, and values are what matter, while the social aspects of religion are not that important. In contrast, the motifs of extrinsic religiosity are based on social or external values and beliefs; religion is used to

gain social standing and endorsement. The Quest orientation is founded on a willingness to question complex ideas. The persons are open to the exploration of existential questions and they are open for new information and doubts. Thus, as we have to assume a complex interconnection of various existing views, attitudes, and concepts, an oversimplification of SpR is not appropriate. The complex interconnections between the different SpR issues and forms of practices described herein strongly support this notion.

One has to account for the fact that the concepts of various esoteric and religious beliefs impact the individual concepts of spirituality, particularly in Europe. Thus it is interesting to compare first the distributions of self-categorizations as religious or spiritual between Germany, the United States, and the Middle East. One U.S. study [27] investigated 838 consecutively admitted hospitalized medical patients over age 50 and found that 88% categorized themselves as R+S+, 3% as R+S–, 7% as R–S+, and 3% as R–S–. In a second U.S. study [28], 996 hospitalized depressed medical patients with chronic illness were asked to place themselves into these categories, with 65% indicating they were R+S+, 11% R+S–, 19% R–S+, and 4% R–S–. This distribution was significantly different than in non-depressed patients. Thus, religious-spiritual categorizations in medically ill U.S. populations appear to be associated with depression levels (R+S+ patients are less depressed).

In Muslim patients with chronic hypertension from Palestine, 80% regarded themselves as R+S+, 5% as R+S–, 2% as R–S+, but 14% as R–S– [29]. This pattern of SpR attitudes was similar to the pattern of North American patients, but in strong contrast to the distribution in German patients. These differences can be explained of course with cultural differences, distinct religious perspectives, but also with the changing social and religious structure of Western European society. Particularly in Germany one may have either no interest in institutional religiosity, or one may set up an individual "religious patchwork," using various existing esoteric and religious resources, to provide meaning, sense, and hope, without social disqualification.

There are also associations between SpR self-categorizations and subscale scores of the SpREUK in German medical patients. Those who indicate that they are R+S+ score highest on all four subscales, compared to other patients. This is especially true for the Trust in higher source subscale and the Search for meaningful support subscale. Conventional religious practices were also highest among R+S+ and those with high Trust in higher source. On the other hand, those who indicated they were neither spiritual nor religious tended to sore high on the Positive interpretation of disease subscale (compared to their scores on other SpREUK subscales). Thus, for such patients, clinicians should focus on their discussions on aspects of how the patients view their disease (encouraging more positive views), without a need to talk about religion or spirituality with these patients. It is important that R-S- patients should not be viewed as "spirituality deficient," because they appreciate other values than religious or esoteric topics.

To them, the following topics are of high relevance: Gratitude, reverence and respect, Compassion, generosity and patience, Conscious interactions (with others, nature, self), and Insight, awareness and wisdom [21].

In North America, the vast majority of medical patients are quite religious, and older patients tend to be more conventionally religious [30]. Also in Arabic patients we observed a significantly stronger interest in Search for meaningful support, Trust in higher source, Positive interpretation of disease and Support in relations of life through SpR as compared to a West German population [29] and for Muslims the "spiritual causes" of disease are regarded much more as given by Allah, but this does neither impair their faith nor their Positive interpretation of disease. In sharp contrast, Europe´s trend towards secularism and individualism will affect the course of how patients will deal with their illness. As confirmed in this study, the general interest in Search for meaningful support and Trust in higher source was low in German patients with chronic diseases, but of great importance particularly in cancer patients, and R+S+ patients. A large fraction of (particularly male) German patients are not religious or do not have an interest in spirituality. But most patients do interpret their illness positively, are able to regard their illness as an opportunity to change life, or to reflect upon what is essential in life, etc. Even many R–S– patients feel this way, albeit to a significantly lower extent. Moreover, those patients with an interest in SpR regard their SpR source as strong support, particularly R+S+ and R–S+, and patients with cancer.

In this context one has to ask how patients may deepen and experience their SpR, and could ask whether they pray more often because of their illness or not. As published previously, patients experience and deepen their SpR only to a lower content with others, but alone and in silence; and they prefer distinct stimulating places which are not necessarily a church [8-11]. This is in agreement with the trend in Europe towards individualism. Preliminary results from an ongoing study of our group with chronic pain patients indicate that 31% pray more often than before, while 46% do not (22% do not know). In case patients do rely to a SpR source, they may favor an individual approach rather than institutional religiosity. In fact analysis of form and frequency of SpR practices in German patients indicated that Conventional religious practices and Unconventional spiritual (body-mind) practices raised lower or moderate interest, while Humanistic practices and Nature oriented practices are much more important [11, 17]. Thus, several patients from Germany have lost the vertical dimension (or have low interest), while the horizontal dimension (others, nature, self) is much more important to them [31]. In line with this suggestion we found that in Germany aspects of spirituality such as Gratitude, reverence and respect and Compassion, generosity and patience revealed the highest interest/importance, while Prayer, trust in God and shelter and Equanimity and meditation gained much lower attention [21].

Holland et al. [32] observed that the use of religious and spiritual beliefs was associated with an active form of coping. They suggested that such beliefs provide

a helpful active-cognitive framework for many individuals from which to face the existential crises of life-threatening illness. Thus, SpR may help one to adapt by finding meaning, hope, and coherence in illness. We can confirm that the positive interpretation of disease (i.e., the message to change life, perspectives, etc.) ranked high in all patients, particularly in patients with cancer and those with a spiritual attitude (R+S+ and R–S+). However, none of the SpREUK scales correlated with the main relevant coping style in patients with chronic diseases, i.e., Search for Information and Medical Help, and only to a minor content with Search for alternatives and help, Perspectives and positivism, or Healthy living and change of Life (i.e., includes healthy lifestyle); the only highly significant correlations were found for Illness as chance and Trust in God [18, 19]. Thus, for German patients with chronic diseases, SpR is just a small adaptive coping factor as compared to other styles.

German patients with cancer, however, often depend on their trust in a higher power and in conventional religious activities to help them to cope with their illness. These patients tend to be older, and are dealing with life-threatening disease that could evoke existential issues that religion may help to uniquely address.

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