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Role of Religion and Spirituality in Medical patients in Germany

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Abstract

Using the new developed SpREUK questionnaire, we examined how German patients (n=129) with cancer, multiple sclerosis and other diseases view the impact of spirituality and religiosity (SpR) on their health and how they cope with illness. Patients with both a religious and spiritual attitude (32%) had significantly higher values in the sub-scales dealing with the search for meaningful support, and the stabilizing effects of SpR than patients without such attitudes (20%), while patients with a non-spiritual religious attitude (35%) had lower perception of the beneficial effects of their SpR and had significantly lower scores in the search for meaningful support sub-scale. Just half of the non-spiritual religious group and 42% of religious patients are convinced that finding an access to a spiritual source has a positive influence on their illness.

Keywords:
Questionnaires; Religion and Medicine; Spirituality and Religion; coping; chronic disease

Introduction

Life threatening diseases confront patients with the question of the meaning and purpose of life. In response, they may rely on religious beliefs to relieve stress, retain a sense of control, maintain hope and their sense of meaning and purpose in life [1]. According to the concept of "external locus of control" by Rotter [2] and Levenson [3], patients will ask medical specialists for help, and may trust in a helping God. However, in several cases patients may lose faith in their religious beliefs, and seek for alternatives. In Europe, we observe a drastic decline in institutional religion [4], which is in contrast to the vitality of different kinds of religion and strong belief in God that can be observed in the USA [5-7]. But it is obvious that spirituality is not absent, even in those patients without confessional bindings, as many of them seem to set up some kind of individual "religious patchwork", using various existing esoteric and religious resources, to provide meaning, sense and hope [8-10].

Spirituality has become a subject of interest in American health care, and an increasing number of studies, commentaries, and reviews examine the connection between religiosity/spirituality and health, its potential to prevent, heal or cope with diseases (for review see [11-21]). Additionally, popular press has also published many articles in which religious faith and practice have been said to promote comfort, healing, or both.

Indeed, there is evidence that spirituality is important in coping with illness, as spiritual well-being offers some protection against hopelessness and despair in terminally ill patients [22-25], but there is as yet but limited understanding of how patients themselves view its impact on their health and well-being, and whether they are convinced of the beneficial effects of spirituality. Pam McGrath [25] argued that because of the dominance of secular ideas of rationalism and positivistic science, notions of spirituality are marginalized or even excluded from the discourse on health care, and thus research into spirituality has been limited by modernist epistemological assumptions. Only a few empirical studies [25, 26] have explored the patients´ view. In a small qualitative survey of German medical patients, religiously inclined patients reported that:

- *"I do not accept my illness as a permanent condition. With the help of God I will become healthy again."*
- *"Strong belief in God and knowledge of the meaning and purpose of life help me to put up with my illness."*
- *"I believe that my illness calls my attention to the fact that I have become more and more dissociated from God."*
- *"My deep inner trust in God provides me with power, especially on my bad days of sickness. Due to the constant dialogue with Him I am never alone."*

One female patient from our tumor service with a rapidly progressive carcinoma of the lung reported that she felt delivered and saved after attending a prayer group and a meditation group, despite the rapid progression of her disease.

Since the search for coping strategies, meaning, purpose and stability in life are relevant aspects of spirituality, we undertook a survey to analyze the basic attitudes of patients with life-changing diseases towards these areas of spirituality/religiosity, with regard to their illness. The notion that 77% of patients want their physicians to take patients´ spiritual needs into consideration [27] might be true for the USA, but not necessarily for other, more secular countries [28-30]. This article analyzes survey data collected among patients in a German hospital using a questionnaire developed by our group [31].

Methods

Subjects

Patients were informed of the purpose of the study and were assured of confidentiality. All patients gave informed consent to participate. The patients were recruited consecutively in the cancer service, the multiple sclerosis service and two internal medical units of the Communal Hospital in Herdecke (Germany). They completed the questionnaire by themselves.

Demographic information of 129 patients is provided in Table 1. Cancer was diagnosed in 45%, multiple sclerosis in 18%, other chronic diseases (i.e. Hepatitis C, liver cirrhosis, inflammatory bowel disease, severe hypertension etc.) in 22%, and acute diseases (inter-vertebral disc prolapse, stomach ulcer, heart arrhythmia etc.) in 15%. Patients in final stages of their disease were not enrolled.

Definition

The preliminary SpREUK 1.0 questionnaire (SpREUK is an acronym of the German translation of "**Sp**iritual and **R**eligious **A**ttitudes in **D**ealing with **I**llness") was designed in order to examine attitudes of patients with life-threatening and chronic diseases towards spirituality/religiosity. In contrast to some other questionnaires, which measure beliefs of specific religious groups, and ask about the relationship with God (i.e. the *Spiritual Well-Being Scale* [31], the *Daily Spiritual Experience Scale* [33], or the *Santa Clara Strength of Religious Faith Questionnaire* [34]), we decided to account for the fact that several patients are offended by institutional religion, or even terms such as God, Jesus, praying, church etc. Therefore, we avoided these terms and asked for the spiritual and religious attitudes in two different questions. Of course, this self-assessed differentiation bears the risk of negative responses towards a spiritual attitude, as some may misinterpret the term spirituality (i.e. as spiritism or occultism), and thus religious patients may delimit themselves from a spiritual orientation. On the other hand, providing prejudicial and suggestive definitions of the term has limitations too. Thus, we completely left it up to the patients to define themselves. (However, in the current version of our questionnaire we added a footnote that the term spirituality may also mean a non-confessional search for "spiritual truth“, and should not exclude Christian, Jewish, Buddhist etc. "forms" of spirituality.)

Measures

The items were generated from patients´ opinions (cancer service of the Herdecke Community Hospital) and experts´ statements (physicians, priest and chaplains working with patients) [35], rather than from theoretical concepts. In the final step of the questionnaire design, the items were improved with respect to already existing questionnaires dealing with the topics of religion and spirituality in patients care.
The 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). Eleven questions have a reverse rating scale or a negative statement to prevent a bias towards positive answers. The SpREUK scores are referred to a 100% level (4 "applied very much" = 100%).
Sub-scale analysis ware performed according to a previously conducted reliability and factor analysis [31] that resulted in the following scales (Table 1):

1: Search for meaningful support
2: Guidance, control and message of disease
3: Support in relations with the external through spirituality/religiosity
4: Stabilizing the inner condition through spirituality/religiosity

As some items require a positive attitude towards spirituality and religiosity, sub-scales 3 and 4 were separated from sub-scales 1 and 2.
The internal consistency for the preliminary 29-item SpREUK 1.0 scales 1-4 was sufficiently high (Table 1). Further details of the validation were described elsewhere [31].
To more precisely differentiate the two main topics of scale 2, for the SpREUK 1.1 questionnaire some items from the SpREUK 1.0 questionnaire were deleted (see Table 3), while others were added.

Statistical analysis

Reliability and factor analysis were performed according to the standard procedures.
Differences in the SpREUK-Scores were tested using the two-tailed t-test. To measure associations between the frequencies of given answers and distinct variables, we used the Kruskal-Wallis test or Pearson´s Chi^2 test as indicated.
We judged $p<0.05$ significant, and $0,05 < p < 0.10$ as a trend. Statistical analysis was performed with SPSS for Windows 10.0.

Results

The mean SpREUK score was 58.5 ± 17.4. Means and standard deviations for study variables are provided in Table 1. The total SpREUK score did not significantly correlate with gender, age, living area, marriage status, disease, or duration of disease, but with denominational affiliation and spiritual attitude. Thus, the SpREUK questionnaire truly measures patients' religious and spiritual attitudes.

However, women had significantly higher SpREUK scores for the sub-sales 1 and 2 than male patients. Also we observed a significant increase of the scores of the sub-scale 2 with age, as younger patients obviously do not rely on external guidance or find some "message" in their illness.

With respect to the marriage status, married patients had significantly lower scores in the sub-scale 1 ("Search for meaningful support"), while divorced patients divorced or living alone had the highest scores. Obviously, married patients find support in the relationship with their partner, while the others have to look for it elsewhere. This suggestion is supported by the fact that patients married or living with a partner had lower scores for the sub-scale 4 ("Support in relations with the external through spirituality/religiosity") than those divorced, living alone or widowed.

Religiosity versus Spirituality

A Christian denomination was reported by 76% of our patients, while only 4% had other denominations, and 19% had none. Since denominational affiliation is not necessarily identical with religiosity or spirituality, we asked whether the patients would describe themselves as religious or spiritual. 32% reported themselves as both religious and spiritual **(R+S+)**; 35% as religious, but not spiritual **(R+S-)**; 19% as neither religious nor spiritual **(R-S-)**; 9% claimed that they were spiritual, but not religious **(R-S+)**; and 4% were not sure. Thus, the numbers of patients with denominational affiliation and self-reported spiritual/religious attitudes is similar.

Next we analyzed the differences in these attitudes. As shown in Table 1, R+S+ had significantly higher SpREUK scores in all four sub-scales than patients without such attitudes.
It was remarkable that within the group of R+S- the score of the sub-scale 1 were was remarkably lower than the score of R+S+ (Table 1). Thus, the search for meaning and hope is associated more with a spiritual attitude (in fact, spiritual attitude loads on sub-scale 1, while religious attitude loads much better on sub-scale 2 than sub-scale 1). In contrast, R+S+ and R+S- had similar scores for the sub-scale 2. For this sub-scale 2, a religious attitude (R+S+ and R+S-) resulted in higher scores, as R- patients obviously do not patients obviously do not rely on external guidance or find some "message" in their illness. However, age and spiritual attitude did not significantly correlate (p=0.16; Pearson´s Chi^2 test).
For the new version of the questionnaire (SpREUK 1.1), scale 2 was differentiated in two sub-scales "fate and control" and "message of disease". Preliminary results with this new version indicate that the SpREUK scores were overall high in the sub-scale "message of disease" and did not differ between the attitude groups. This indicates that the illness had "meaning" for the patients and emitted a life-changing signal, whatever the particular spiritual attitude of the patient was.
In sub-scales 4 and 5, there were no relevant differences between R+S- and R-S+, indicating that the “quality" of both attitudes is more or less identical. However, the scores of R+S- and R-S+ nevertheless were significantly lower than R+S+.

Taken together, R+S+ were more in search of meaningful support and had a higher perception of the beneficial effects of their spirituality/religiousness than R+S-. In contrast, R-S+ were less willing to accept their disease or to see some kind of meaning in it.

Descriptive analysis of self-reported attitudes

When focusing on the more existential questions of sub-scales 2 (Table 2), we found that most patients regarded their illness as a hint to change their life, as a chance for inner development,

that they accepted their disease and bore it calmly, but did not regard it as caused by fault or guilt (Table 2). They showed trust in their inner strength and in the doctors or therapists who helped them to keep their illness at bay. These attitudes indicate either some kind of stoic acceptance of illness or a low individual "fighting-spirit".

Placed in the context of the concept of “control locus” developed by Rotter (1966) and Levenson (1973), it is obvious that especially the R+ patients referred to, and had trust in a higher power (divine external locus of control), while R-S+ had trust in their inner strength and referred to a inner power (internal locus of control). Moreover, R-S+ accepted their illness and bore it calmly. But neither the R+ nor the R- agreed that life is driven by guilt or destiny (fatalistic external locus of control), while they both had trust in their doctor (social external locus of control).

The answers of the sub-scale on the “search for meaningful support” were less clear-cut. 43% reported that their illness brought a renewed interest in spiritual and religious questions, while 38% disagreed: In fact, 75% of S+R- agreed, but only 52% of R+ (maybe because they are already engaged); obviously, R-S- were not interested.

55% of R-S+ were convinced that finding an access to a spiritual source had a positive influence on their illness, also 42% of R+ and even 33% of R-S-. But just 8% of R-S- were searching for an access to spirituality/religiosity, while in contrast 64% of R-S+ were searching, but only 28% of R+ (again one may assume that they were already sure of their own access).

Surprisingly, although they described themselves as neither religious nor spiritual, 56% of R-S- patients favored distinct places (sub-scale 3) which were obviously stimulating to them, and 52% referred to an inner power, entirely independent of external powers (sub-scale 4).

Most of the R- did not believe that people (i.e. priest, teacher etc.) could teach them and advance their spirituality; they reported that they did not need spiritual advice, since they knew by themselves what to do. In contrast, R+ believed in the benefits of spiritual advice by others.

The practice of religiosity or spirituality played a major role in the lives of R+ and R-S+. They were convinced that spirituality/religiosity helped them to cope better and more consciously with both life and illness, that it helped to restore spiritual and physical health, brought a deeper connection with the world around them and with their neighbors, and that practicing their spirituality/religiosity promoted contentment, inner peace and strength. To deepen their spirituality/religiousness, R+ and R-S+ went to distinct places, even 56% of S-R (one may speculate that this reflects a kind of latent need for spirituality). However, most patients did not agree that their spirituality/religiosity was deepened when practicing with others (even among the R+ only 49% agreed), they preferred to practice alone and in silence (even 81% of R+). This represents a strong contrast to the conventional practice of most religious traditions.

Sex-specific differences in the attitudes

A significant difference in the answers of women and men was observed only for the statement “My illness is a chance for my own development”. 41% of the women agreed, but only 29% of male patients (p=0.033; Pearson´s Chi^2 test).

Trend showed a lower number of men interested in spiritual/religious questions in response to their illness than women (51% of women agreed vs. 29% of men; p=0.087); for only a minority of the men did an engagement in religion or spirituality play a major role in life (54% of women agreed vs. 34% of men; p=0.063), or help them to deal with illness (59% of women agreed vs. 51% of men; p=0.051), or become deepened when practicing alone and in silence (70% of women agreed vs. 56% of men; p=0.057).

Disease-specific differences in the attitudes

Just one statement (“Currently my whole thinking revolves around my illness") resulted in significantly different answers from patients with cancer, multiple sclerosis, acute and other chronic diseases. 70% of patients with multiple sclerosis and only 54% of cancer patients

disagreed, while the patients with other chronic diseases (54%) or acute diseases (50%) agreed (p=0.023, Pearson´s Chi^2 test). This could be due to the fact, that most of the later patients were inpatients of our hospital, while those with multiple sclerosis and cancer were mainly outpatients recruited in our ambulances. However, due to the low validity and reliability of this question, it was deleted from the final form of the questionnaire anyway.

Discussion

The preliminary SpREUK 1.0 questionnaire was designed to survey the basic attitudes of patients with life-changing diseases towards spirituality/religiosity and their adjustment to their illness. As reported previously [31], the SpREUK questionnaire is a valid instrument with which to measure a patient's search for meaningful support through spirituality/religiosity in terms of disease coping, and restoration/promotion of health.

In order also to address atheist or agnostic patients, we avoided terms that were loaded with religious meaning (i.e. God, Jesus, church etc.), as well as deciding to separate religious attitudes from spiritual attitudes. Although this might be confusing on a personal level, it is of conceptual importance. Spirituality is a complex and multi-dimensional issue, and can be defined as an individual and open approach in the search for meaning and purpose in life, as a search for "transcendental truth" which may include a sense of connectedness with others, nature, and/or the divine [35]. In contrast, religion is an institutional and culturally determined approach which organizes the collective experiences of people (faith) into a closed system of beliefs and practices. Spirituality can be found through religious engagement, through an individual experience of the divine, and/or through a connection to nature. In order not to influence the patients, we left it up to them to define their attitudes.

A spiritual attitude resulted in high SpREUK scores in the "search" sub-scale 1, whether the patients had religious attitudes or not. The main attitudes of the patients can be summarized as follows:

- **R+** (R+S+ and R+S-) patients relied on a higher presence in which they trusted. They thought it possible that others (i.e. priest, teacher etc.) would be able to teach and help them to develop their spirituality. The practice of religion/spirituality played a major role in their life and was of more help in coping with their illness than in comparison with the non-religious patients. R+S+ had significantly higher SpREUK scores in the "search" sub-scale 1 and the sub-scale 3 and 4 than their R+S- counterparts.
- **R-S+** patients were searching for an access to spirituality/religiosity, and their illness had brought a renewed interest in spiritual or religious questions. They demonstrated trust in their inner strength, and more of them managed their life consciously, also finding inner peace and contentment in their spiritual activity.
- **R-S-** patients did not share these beliefs, but were convinced that whatever happened was due to their own fault. In trend they tended not to need spiritual advice, as they claimed to know by themselves what should be done (similar to the R-S+). However, half of them favored distinct places which were obviously stimulating to them, and referred to an inner power.

The groups of patients with different religious/spiritual attitudes found herein correspond to the three types of spiritual well-being identified by Riley *et al*. [36]: religious (69%), existential (17%), and non-spiritual (14%). Even the proportion of our patients without spiritual or religious attitudes was similar (19%), although they presented a slightly higher number of "existential type" patients.

However, the way our patients practiced their religious/spiritual engagement tended towards a more existential/humanist approach rather than to the traditional practice of institutional religion. Preliminary results of an ongoing study with the practice manual of the SpREUK 1.1 questionnaire reveal that 46% of our patients prayed frequently or periodically (in contrast to 33% who prayed seldom or 21% never), but that only a few went to church (22%), red religious/spiritual books (13%) or meditated (21%). Yet most patients did everything to improve

their well-being (79%), worked on their spiritual development (83%), reflected upon the meaning of life (75%), and tried to achieve insight - also into themselves (67%). Most of them claimed to make an effort for other people (75%), tried to convey positive values and convictions to others (67%), to be aware in the way they treat the world around them (96%), and sought to have a healing effect on the environment (65%). Thus, even the religious patients tended towards non-institutional forms of spirituality. This is supported by the finding that R+ and S+ patients in our area do not favor practicing with others, but rather alone and in silence.

Given the importance of spiritual well-being to seriously ill patients, integrating systematic assessment of such needs into medical care is crucial. Relevant assessment tools are needed to consider which aspects of religious/spiritual coping may be important in a particular patient’s adjustment to illness. However, the positive effects of religious or spiritually-based coping have long been thought to be secondary to the provision of social support through church-related or socially-oriented religious activities [11]. But our findings point to the fact that patients are not necessarily interested in these topics. Of course, patients who describe themselves as spiritual but not religious are more in search for support, meaning and purpose than religious patients, who seem to be more stable thanks to their trust in a supporting God. But really surprising was the fact that just half of the R-S+ were convinced that finding an access to a spiritual source has a positive influence on their illness and only 42% of religious patients; most of the patients accepted their diseases and bore it calmly. One third of the R-S- shared this trust in the beneficial effects of spirituality, but only a few of them were really searching for an access to spirituality/religiousness, in contrast to 64% of R-S+. This leads us to infer that patients without religious attitudes may be especially in need of support by spiritual caregivers. Yet one has to face the fact that not all patients are interested in these topics [37].

So, what about the growing group of R-S- patients? Several studies have shown that religious involvement and spirituality are associated with better health outcomes, coping skills, and health-related quality of life, as well as with lower rates of anxiety, depression, and suicide [12-24], and that addressing the spiritual needs of the patient may enhance recovery from illness [18]. Moreover, research has confirmed that spiritual well-being is positively associated with quality of life, fighting-spirit, but also fatalism, yet negatively correlated with helplessness/hopelessness, anxious preoccupation, and cognitive avoidance [38]. But for the R-S- patients these coping strategies were of minor relevance. They were not interested in "faith communities", "divine support", "transcendental meaning", and they did not believe in the beneficial effects of spiritual engagement. However, many of them referred to an inner power, and went to distinct and stimulating places to deepen some kind of "spirituality". These findings have to be addressed in further studies as they have important implications for the care of patients, since an individual approach rather than spiritual care-groups is called for.

Since faith plays an eminent role even in medical decision making [39], and since several patients considered spiritual health and physical health as equally important [27], religiosity/spirituality should not be reduced to that function of "last hope" which remains when doctors, psychologists, social workers etc. have left the patient. It may be true that medical doctors or nurses have neither the time, courage or interest to discuss these needs with their patients, and thus call in chaplains and priests [12, 30, 40], but many of the patients expressed positive attitudes toward physician involvement in spiritual issues [27].

A strength of our study is its attempt to differentiate between “religious” and “spiritual” attitudes of patients in their search for support and meaning (also in illness), and to integrate the question of "meaning in illness". The focus of a larger study is to enroll patients from different European countries, especially from the highly secular Eastern Europe, and to correlate the SpREUK questionnaire with other relevant scales, such as the FACIT-Spiritual well-being scale [41]. Further, longitudinal studies with cancer and multiple sclerosis patients are planned.

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Table 1: Mean values of the items from SpREUK 1.0 and reliability analysis

Factors and Items	Mean value Scores 0-4	Standard deviation	loading	corrected Item-Total correlatio	Alpha if item deleted
1: Search for meaningful support (alpha = 0,8242)					
renewed interest in spiritual/religious questions through illness	1,95	1,37	,835	,7534	,7725
others might teach and help to develop spirituality	2,08	1,33	,780	,6650	,7867
urged to spiritual/religious insight	1,95	1,26	,735	,6122	,7950
spiritual attitude	2,02	1,31	,727	,5949	,7970
does not need spiritual advice	1,97	1,35	,639	,5319	,8061
finding access to a spiritual source can have a positive influence on illness	2,13	1,25	,525	,4287	,8193
searching for an access to spirituality/religiosity	1,72	1,25	,512	,4423	,8175
spiritual/religious ideas are out-of-date	3,07	1,14	,474	,3309	,8297
2: Guidance, control and meaning of disease (alpha = 0,6167)					
life is fixed by fate	1,93	1,29	,614	,3678	,5678
trust in inner strength	2,67	1,11	,589	,3441	,5767
trust in a higher power	2,79	1,22	,537	,4299	,5496
doctor or therapist help to keep my illness at bay	2,75	1,23	,535	,2720	,5958
illness encourages to get to know himself better	2,82	1,14	,485	,3704	,5689
religious attitude	2,67	1,28	,490	,3704	,5689
disease acceptance	2,39	1,31	,471	,2695	,5988
illness as a hint to change life	2,91	1,06	,227	,1249	,6312
3: Support of the external relations through spirituality/religiosity (alpha = 0,8933)					
provides deeper connection with the world around	2,56	1,24	,834	,7726	,8724
helps to manage life more consciously	2,70	1,22	,827	,8048	,8701
plays a major role in life	2,20	1,39	,818	,7663	,8718
helps to cope better with illness	2,48	1,34	,791	,7250	,8755
helps to restore mental and physical health	2,29	1,23	,734	,6824	,8794
practicing with others deepens spirituality/religiosity	1,68	1,46	,644	,5626	,8897
practicing alone and in silence deepens spirituality/religiosity	2,62	1,30	,642	,5582	,8888
helps to view disease as a beneficial challenge for own development	1,90	1,30	,621	,5551	,8890
distinct places stimulate spirituality/religiosity	2,72	1,32	,576	,4846	,8946
4: Stabilizing the inner condition through spirituality/religiosity (alpha = 0,7365)					
provides feeling of contentment and inner peace	2,61	1,29	,795	,6520	,6058
promotes inner strength.	2,42	1,32	,781	,7159	,5647
refers to a higher (external) power	2,69	1,43	,697	,5484	,6656
refers to an inner power	2,22	1,30	,625	,2465	,8214

Rotated Component Matrix: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization (rotation converged in 3 Iterations)

Table 1b: Component Transfomation Matrix showing the correlation of factors.

Skale	1	2	3	4
1	**,989**	- ,108		
2	,148	**,989**		
3			**,915**	,403
4			-,403	**,915**

Rotated sums of squandered loadings
Components 1 and 2 explain 40.2% of variance
Components 3 and 4 explain 57.3% of variance.

Table 2: Demographic data[1] and SpREUK Score of 129 patients

	N	%	mean SpREUK scores				
			total score (mean 58.5 ± 17.4)	**sub-scale 1** (54,8 ± 21,5)	**sub-scale 2** (64,9 ± 15,6)	**sub-scale 3** (57,8 ± 24,3)	**sub-scale 4** (61,4 ± 24,7)
sex				*	*		
female	87	67	60.8 ± 17.1	55,3 ± 21,8	67,0 ± 15,6	61,2 ± 23,4	64,7 ± 22,9
male	41	32	54.2 ± 17.3	48,2 ± 19,7	60,7 ± 14,9	54,4 ± 24,8	57,2 ± 28,8
age					**		
< 30	5	4	**48.8 ± 12.1**	**44,4 ± 14,7**	**53,8 ± 9,7**	**44,4 ± 16,7**	**51,3 ± 13,5**
30-49 years	46	36	59.1 ± 17.1	56,0 ± 21,5	62,4 ± 16,2	56,7 ± 23,9	61,4 ± 23,5
50-69 years	58	45	59.3 ± 17.7	53,0 ± 22,0	64,5 ± 13,4	60,0 ± 23,0	62,8 ± 25,6
> 70 years	20	16	57.3 ± 18.6	46,7 ± 20,9	74,5 ± 17,5	63,5 ± 28,7	64,7 ± 29,1
marital status				*		*	
married	80	62	54.9 ± 17.4	47,7 ± 20,6	64,3 ± 15,3	54,4 ± 24,8	59,4 ± 26,6
living with partner	20	16	61.3 ± 12.5	57,7 ± 16,4	59,8 ± 12,7	59,6 ± 18,3	66,6 ± 14,2
divorced	10	8	65.4 ± 17.4	**68,4 ± 24,5**	71,6 ± 17,1	**68,3 ± 18,8**	64,4 ± 27,0
alone	9	7	**67.6 ± 22.3**	61,8 ± 24,6	67,4 ± 18,4	**67,6 ± 31,0**	**72,2 ± 26,9**
widowed	8	6	65.5 ± 15.5	56,6 ± 20,7	70,3 ± 14,5	**76,0 ± 18,2**	62,5 ± 27,1
living area					*		
urban	81	63	57.6 ± 18.2	52,9 ± 22,9	62,2 ± 14,3	56,2 ± 24,6	62,8 ± 23,5
rural	40	31	59.8 ± 16.0	51,3 ± 19,3	69,7 ± 16,4	63,0 ± 23,8	60,5 ± 28,2
diseases							
Cancer	58	45	59.9 ± 17.3	55,3 ± 20,8	66,1 ± 14,3	63,5 ± 23,9	65.6 ± 27.3
Multiple Sclerosis	23	18	53.2 ± 15.3	48,8 ± 20,8	57,9 ± 15,9	53,0 ± 21,8	57.0 ± 30.1
Chronic diseases	29	22	60.1 ± 18.4	54,3 ± 22,5	64,0 ± 17,2	65,7 ± 27,5	69.5 ± 32.2
Acute diseases	19	15	58.2 ± 18.6	47,5 ± 22,9	71,1 ± 14,2	63,8 ± 27,1	66.9 ± 32.6
confession			**	*	**	**	**
Christian	98	76	61.9 ± 15.8	55,4 ± 20,6	67,1 ± 14,2	63,9 ± 21,0	64,2 ± 24,2
Others	5	4	**68.7 ± 14.1**	56,9 ± 23,7	**80,0 ± 15,2**	**74,4 ± 22,6**	**90,0 ± 9,5**
None	24	19	**42.9 ± 16.5**	**41,3 ± 22,4**	**53,6 ± 15,3**	**35,0 ± 22,7**	**48,4 ± 24,7**
spiritual attitude			**	**	**	**	**
R+S+	41	32	**72.9 ± 11.7**	**70,3 ± 16,1**	69,7 ± 13,6	**77,1 ± 15,3**	**74,4 ± 24,8**
R+S-	45	35	58.1 ± 13.0	**46,3 ± 18,0**	70,0 ± 13,4	60,1 ± 18,2	61,8 ± 22,1
R-S+	12	9	59.7 ± 12.6	61,2 ± 13,4	59,1 ± 12,8	58,3 ± 21,6	63,0 ± 17,8
R-S-	25	19	**37.1 ± 11.8**	**32,3 ± 15,5**	**53,6 ± 16,5**	**27,9 ± 17,4**	**46,8 ± 25,4**

For some variables, patients did not provide answers, and thus not all categories equal 100%. Deviations of >15% from the mean were highlighted. ** p < 0,01 and * p < 0,05 (Kruskal-Wallis-Test for asymptomatic significance)

Table 3: Frequencies of answers and religious/spiritual attitude

	agreement	**dis-agreement**	**agreement**			**dis-agreement**			**p** (Chi^2)
	All	**All**	**R+**	**R- S+**	**R-S-**	**R+**	**R- S+**	**R-S-**	
1: Search for meaningful support									
renewed interest in spiritual/religious questions through illness	43	38	52	75	4	31	17	88	**0.000**
searching for an access to spirituality/religiosity.	25	42	28	64	8	46	18	71	**0.009**
urged to spiritual/religious insight	31	32	44	46	4	28	18	68	**0.000**
finding access to a spiritual source can have a positive influence on illness	38	27	42	55	33	29	18	33	0.121
others might teach and help to develop spirituality	45	36	57	33	24	27	50	68	**0.000**
does not need spiritual advice	39	38	36	50	52	43	25	32	0.125
spiritual/religious ideas are out-of-date	10	71	4	8	26	83	83	48	**0.003**
spiritual attitude	41	33	53	100	0	29	0	84	**0.000**
2a: Control and fate acceptance									
* what happens is due to own fault	22	56	17	25	42	58	50	50	**0.032**
life is fixed by fate	35	53	39	25	29	44	58	50	/
disease acceptance	57	29	57	74	58	31	17	41	/
doctor or therapist help to keep my illness at bay	55	22	62	64	54	19	36	21	/
trust in a higher power	67	16	84	58	24	7	17	52	**0.000**
religious attitude	66	21	100	0	0	0	83	68	**0.000**
2b: Message of disease									
trust in inner strength	61	17	62	83	53	15	8	29	0.155
illness encourages to get to know himself better	67	15	76	83	58	11	17	25	0.099
illness as a hint to change life	74	12	77	75	87	11	25	9	/
* illness as a chance for development	60	24	69	75	52	23	25	36	0.157
* illness has brought down aim and purpose in life	15	60	16	25	8	60	58	79	/
* development of new goals in life	47	34	50	33	58	33	50	33	/
* whole thinking revolves around illness	40	48	38	50	43	53	50	44	/

Table 3 (continued)

	agreement	**dis-agreement**		**agreement**			**dis-agreement**			**p** (Chi^2)
	all	**all**		**R+**	**R- S+**	**R-S-**	**R+**	**R- S+**	**R-S-**	
3: Support of the external relations through spirituality/religiosity										
plays a major role in life	49	36		70	25	0	18	50	96	**0.000**
* help in decision making	47	29		51	67	40	25	25	48	**0.017**
helps to manage life more consciously	64	16		78	91	20	6	9	60	**0.000**
provides deeper connection with the world around	60	18		73	67	24	8	17	56	**0.000**
helps to cope better with illness	56	25		73	58	16	15	33	64	**0.000**
helps to restore mental and physical health	48	23		58	67	12	21	8	52	**0.000**
helps to view disease as a beneficial challenge for own development.	40	37		50	50	12	31	33	68	**0.000**
practicing with others deepens spirituality/religiosity	36	53		49	0	16	41	92	84	**0.000**
practicing alone and in silence deepens spirituality/religiosity	65	24		81	83	20	14	17	64	**0.000**
distinct places stimulate spirituality/religiosity	74	19		81	83	56	13	8	44	**0.001**
4: Stabilizing the inner condition through spirituality/religiosity										
provides feeling of contentment and inner peace	58	16		59	75	32	18	40	32	**0.007**
promotes inner strength.	50	26		64	68	12	15	25	64	**0.000**
refers to a higher (external) power	60	24		72	33	44	15	50	40	0.06
refers to an inner power	43	32		41	67	52	35	25	32	/

Results are in % of patients who agreed ("applies quite well" and "definitely applies") or disagreed ("does not apply at all" and "does not really apply"). Indifferent answers ("I don't know") are not added into this table. R+ religious attitude (including R+S+ and R+S-); R-S+ spiritual, but not religious; R-S- neither religious nor spiritual attitudes.
* For this table, also questions which were deleted from the final SpREUK 1.0 questionnaire (see [31]) were presented. Moreover, the items of scale 2 were differentiated in two sub-scales according to the distinct subtopics.