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Factor Structure of the Spiritual Needs Questionnaire (SpNQ) in Persons with Chronic Diseases, Elderly and Healthy Individuals

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Abstract: The Spiritual Needs Questionnaire (SpNQ) is an established measure of psychosocial, existential and spiritual needs. Its 4-factor structure has been primarily validated in persons with chronic diseases, but until now has not been done in elderly and stressed healthy populations. Therefore, we tested the factor structure of the SpNQ in: (1) persons with chronic diseases (n = 627); (2) persons with chronic disease plus elderly (n = 940); (3) healthy persons (i.e., adults and elderly) (n = 1468); and (4) chronically ill, elderly, and healthy persons together (n = 2095). The suggested structure was then validated using structured equation modelling (SEM). The 4-factor structure of the 20-item SpNQ (SpNQ-20) was confirmed, differentiating *Religious Needs*, *Existential Needs*, *Inner Peace Needs*, and *Giving/Generativity Needs*. The psychometric properties of the measure indicated (CFI = 0.96, TLI = 0.95, RMSEA = 0.04 and SRMR = 0.03), with good reliability indices (Cronbach's alpha varying from 0.71 to 0.81). This latest version of the SpNQ provides researchers with a reliable and valid instrument that can now be used in comparative studies. Cultural and religious differences can be addressed using their different language versions, assuming the SpNQ's structure is maintained.

Keywords: spiritual needs; questionnaire; factorial structure; validation; structural equation modeling; patients; chronic disease; healthy persons; elderly

1. Introduction

Confronted with chronic and life-threatening diseases, patients often wish to talk with someone about their existential and spiritual needs, but have difficulties finding a person who they trust enough to talk about such 'private' aspects of their lives. Health professionals may have limited time to address patients´ specific existential and spiritual needs, and often see this task as going beyond their professional training. Consequently, they may call a board-certified chaplain. However, one study of

German cancer patients found that these patients wanted their physicians to know about their spiritual orientation (Frick et al. 2006). In a study of German out-patients with diseases associated with chronic pain, researchers found that "23% talked with a chaplain/priest about their spiritual needs, 20% had no partner to talk about these needs, while for 37% it was important to talk with their medical doctor about these needs" (Büssing et al. 2009). A majority (72%) of patients with advanced cancer from the USA felt minimally or not at all supported in their spiritual needs (Balboni et al. 2007), and one may argue that this is not the primary task of the health care system. However, about half of these patients (47%) also did not feel supported by their religious community. This means that a large proportion of persons with chronic and life-threatening diseases have unmet spiritual needs that no one seems to care about. Despite the clear recommendations of a US Consensus Conference (Puchalski et al. 2009) that a patient's spirituality should be adequately assessed (i.e., spiritual history) and integrated into the treatment plan by addressing patients' spiritual needs, this is often not done. These recommendations were intended to improve the quality of palliative care. In contrast to this focus, one may ask why the topic of spirituality as a resource should be considered relevant only during the late stages of disease and not early on when patients are first confronted with the diagnosis.

Addressing unmet spiritual needs requires specific knowledge about what the individual persons require and expect. Therefore, these unmet needs have to be operationalized and measured. Health professionals, chaplains and patients´ relatives will then have a chance to respond to those needs.

In a narrative review, Seddigh et al. (2016) described eight measures currently being used to assess patients' spiritual needs. They highlighted the Spiritual Needs Questionnaire (SpNQ), describing it as "the most important assigned questionnaire for the evaluation of spiritual needs of particular patients". This instrument was developed in 2009 to measure a person's unmet psychosocial, existential and spiritual needs in a standardized way (Büssing et al. 2009, 2010). It was distinguished from other measures by not focusing on "patients close to death as opposed to those with chronic illness" (Seddigh et al. 2016). The underlying theoretical basis for the SpNQ refers to four core dimensions of spiritual needs, i.e., Connection, Peace, Meaning/Purpose, and Transcendence (Büssing and Koenig 2010). These were divided into categories of social, emotional, existential, and religious needs. These dimensions of spiritual needs can be further categorized according to Alderfer´s model of Relational, Existential and Growth needs (Büssing 2010), i.e., Relational in terms of a connection with others or the Sacred, Existential in terms of needs to find states of inner peace, hope and forgiveness, and Growth in terms of meaning in life, self-realization, etc.

The primary structure of the SpNQ (Cronbach's alpha ranging from 0.82 to 0.90) involved four main factors, i.e., *Religious Needs*, *Needs for Inner Peace*, *Existential Needs (Reflection/Meaning)* and *Giving Needs* (Büssing et al. 2010, 2012). The 4-factorial structure was verified with a sample of patients with chronic diseases (i.e., cancer and pain diseases). The German language version of the instrument was examined not only in persons with chronic diseases (Büssing et al. 2013a; Offenbaecher et al. 2013; Höcker et al. 2014; Haußmann et al. 2017), but also in elderly persons living in retirement and nursing homes (Erichsen and Büssing 2013; Man-Ging et al. 2015), in soldiers with and without posttraumatic stress disorder symptoms (Büssing et al. 2015), and in stressed mothers with sick new born or premature infants (Büssing et al. 2017). Further, the instrument has been translated into many different languages and used to identify spiritual needs in different countries (e.g., China, Poland, Croatia, Iran, Australia, Indonesia, Brazil, and others) (Büssing et al. 2013b, 2015; Glavas et al. 2017; Nuraeni et al. 2015; Nejat et al. 2016; Munirruzzaman et al. 2017; Hatamipour et al. 2018; Valente et al. 2018).

2. Factorial Structure of the SpNQ in Persons with Chronic Diseases, Elderly and Healthy Persons

The instrument's factorial structure has thus far not been tested in healthy populations which may not share the same life experiences and spiritual challenges that persons with chronic illness or elderly persons living in retirement homes must confront. For example, item N10 addresses finding meaning in illness and/or suffering, and may thus not be applicable to healthy persons who have

no experience with suffering and illness. In addition, reflecting back on one's life (item N4) is of less relevance to healthy younger persons, but of particular importance to elderly persons and those with life-threatening diseases.

The purpose of our study is to psychometrically test and refine the SpNQ so it could be used to compare spiritual needs of different populations, including those who are healthy and those with chronic illness. Therefore, we tested the factorial structure of the SpNQ in existing datasets that involved both ill and healthy persons (Table 1).

Table 1. Included data sets and distribution by age and gender.

		Patients with Chronic Diseases	Healthy Persons	Elderly in Retirement Homes	All Persons
Number of persons		627	1158	313	2095
Gender	Women	65.5%	18.0%	76.0%	40.4%
	Men	34.5%	82.0%	24.0%	59.6%
	All	100.0%	100.0%	100.0%	100.0%
Age groups	<31 years	6.5%	39.1%	0.0%	24.5%
	31–40 years	9.0%	36.2%	0.0%	23.4%
	41–50 years	23.1%	19.1%	0.0%	17.1%
	51–60 years	27.6%	5.6%	0.6%	10.5%
	60–70 years	19.0%	0.0%	3.9%	5.5%
	>70 years	14.9%	0.0%	95.5%	18.9%
	All	100.0%	100.0%	100.0%	100.0%

3. Materials and Methods

3.1. Participants

To test the instrument's factorial structure, we relied on existing datasets that involved both ill and healthy persons from Germany (Table 1), i.e., 448 patients with chronic pain diseases, 116 persons with cancer, and 63 persons psychiatric/neurological diseases (Büssing et al. 2013b; Offenbaecher et al. 2013), 1033 adults (Büssing and Recchia 2016), 125 mothers with sick newborns (Büssing et al. 2017), and 313 elderly persons (Erichsen and Büssing 2013; Man-Ging et al. 2015; Mayr et al. unpublished). All groups differed significantly with respect to gender and age ($p < 0.0001$; χ^2).

All persons except the very old persons responded to anonymous questionnaires by themselves; elderly persons were offered assistance in self-reporting (i.e., an external person read the questionnaires and filled in their responses).

3.2. Methods

The factorial structure (exploratory factor analysis: principle component analysis with Varimax rotation) and internal consistency (Cronbach's alpha) was examined in the following manner: (1) in persons with chronic diseases; (2) in persons with chronic disease and elderly; (3) in healthy persons (i.e., adults and elderly); and (4) in diseased and healthy persons together (see Table 1). To determine the factor structure of the measure, we conducted factor analysis using structural equation modelling (SEM) using the entire sample.

3.3. Spiritual Needs Questionnaire

The SpNQ can be used either as a diagnostic tool with 27 items or as a research instrument which does not use all items. The initial version of the SpNQ (version 1.2) used 19 items to which two new items were added to strengthen the 3-item *Giving* factor (Büssing et al. 2012): N27 (assured that your life was meaningful and of value) and N26 (pass own life experiences to others). Some of the initial items were not used in the following 2.1 version, i.e., items N1 (more attention by others), N3 (someone

from your community cares), N24 (becoming completely well), and N25 (connected with the family), which were regarded as 'informative' marker items.

However, due to a weak item-to-scale correlation and weak factor loadings for two additional items, these two items were eliminated from version 2.1 of the SpNQ, i.e., items N5 (dissolve open aspects of your life) and N14 (give away something from yourself). These were still regarded as conceptually relevant, however, and were included again in the current item pool that was to be tested in the present analysis. Thus, we tested the items of the previous version 2.1 and some of the relevant items of the initial version 1.2 together.

The intensity of unmet needs was scored using a 4-point scale ranging from disagreement to agreement (0—*not at all*; 1—*somewhat*; 2—*strong*; 3—*very strong*).

3.4. Factor Structure in the Different Samples

In all four samples, the items N4 (reflect back on your life) and N13 (turn to someone in a loving attitude) loaded too weakly on the respective factors and were thus removed from the item pool. As shown in Table 2, among persons with chronic diseases the 4 factors were replicated. In that sample, item N2 (talk with someone about fears and worries) loaded weakly on both the *Existential Needs* factor and the *Inner Peace Needs* factor. Adding elderly persons to the sample of those with chronic diseases resulted in a split of the *Existential Needs* items (Table 2), with a three-item factor consisting of forgiveness and dissolving open aspects in life, and a two to three item factor consisting of relieving talks about life after death, meaning of life, and finding meaning in life. The item N2 had a weak loading on all three factors. Testing the SpNQ exclusively in a sample of non-diseased persons (i.e., healthy adults and elderly) again resulted in a split of the *Existential Needs* factor items. Combining all data sets of persons with chronic diseases, elderly, and healthy persons, the four-factor structure of the SpNQ was confirmed. Here, item N2 (talk with someone about fears and worries) loaded best on the *Inner Peace Needs* factor, as was initially found.

Thus, the SpNQ in its new version (SpNQ-20) consists of 20 items, i.e., 6 items addressing *Religious Needs*, 6 items addressing *Existential Needs*, 4 items addressing *Inner Peace Needs*, and 4 items addressing *Giving/Generativity Needs*. The internal reliability of these factors was good (Cronbach's alphas ranging from 0.71 to 0.87) (Table 2).

Table 2. Synopsis of factor loadings in diseased, elderly and healthy persons.

	Persons with Chronic Diseases (*n* = 627)				**Persons with Chronic Diseases + Elderly (*n* = 940)**					**Healthy Persons (*n* = 1468)**					**All Persons (*n* = 2095)**			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Cronbach's alpha	0.88	0.77	0.75	0.74	0.87	0.66	0.71	0.68	0.70	0.87	0.66	0.69	0.64	0.60	0.87	0.73	0.74	0.71
N20 pray for yourself	**0.797**				**0.824**					**0.837**					**0.828**			
N23 turn to a higher presence (i.e., God, Allah, Angels)	**0.745**				**0.773**					**0.780**					**0.784**			
N21 participate at a religious ceremony (i.e., service)	**0.812**				**0.816**					**0.772**					**0.764**			
N18 pray with someone	**0.782**				**0.744**					**0.765**					**0.755**			
N19 someone prays for you	**0.775**				**0.747**					**0.746**					**0.746**			
N22 read religious/spiritual books	**0.603**	0.335			**0.605**					**0.618**					**0.642**			
N17 be forgiven	0.313	**0.534**				**0.707**							**0.769**				**0.682**	
N16 forgive someone from a distinct period of your life		**0.503**		0.348		**0.639**							**0.731**				**0.641**	0.349
N5 dissolve open aspects of your life		**0.515**	0.381			**0.666**							**0.670**				**0.563**	
N11 talk about the question of meaning in life		**0.758**						**0.752**						**0.801**	0.316	0.364	**0.541**	
N12 talk about the possibility of life after death	0.351	**0.644**						**0.706**						**0.745**	0.381		**0.534**	
N10 find meaning in illness and/or suffering		**0.608**						**0.592**				0.335		0.441		0.457	0.371	
N7 dwell at a place of quietness and peace			**0.801**			0.369			**0.713**			**0.766**				**0.762**		
N6 plunge into beauty of nature			**0.755**				0.363		**0.702**		0.470	0.469				**0.590**		
N8 find inner peace		0.381	**0.721**			0.478			**0.653**			**0.743**				**0.721**		0.408
N2 talk with someone about fears and worries		0.390	0.373			0.483		0.301	0.313			**0.610**				**0.576**	0.337	
N26 pass own life experiences to others				**0.789**			**0.668**				**0.565**							**0.626**
N27 assured that your life was meaningful and of value				**0.730**			**0.613**				0.459							**0.534**
N15 give solace to someone				**0.599**		0.338	**0.646**				**0.719**							**0.698**
N14 give away something from yourself		0.365		**0.520**		0.317	**0.631**				**0.729**							**0.661**

Main component analysis (Variamax rotation with Kaiser normalization); only factor loadings are depicted < 0.03; items loading on a specific factor > 0.5 are highlighted (bold).

3.5. Structured Equation Modelling

After defining the most reasonable factor structure for the pooled data, a structural equation modeling (SEM) was used to confirm the structure. This advanced statistical tool includes many statistical techniques, such as regression modeling, factor and correlation analysis combined in one model. Model fit was determined using Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). The thresholds for a good fit are CFI and TLI > 0.95, SRMR < 0.06 and RMSEA < 0.05.

These indices for the SpNQ-20 were CFI = 0.96, TLI = 0.95, RMSEA = 0.04 and SRMR = 0.03, with good to very good reliability scores (Chronbach's alphas ranging from 0.71 to 0.81). Two variables loaded on two different factors; such cross-loadings are quite common in such models allowing variables to move freely from one factor to another (Asparouhov and Muthén 2009). Figure 1 shows that the variable N5 (dissolve open aspects of your life) loaded on both *Religious Needs* and *Existential Needs*; however, the loading on the *Religious Needs* factor was relativley weak, while on the *Existential Needs* factor, the loading was strong. Variable N6 (plunge into beauty of nature) loaded positively on both the *Inner Peace Needs* and *Giving/Generativity Needs* factors.

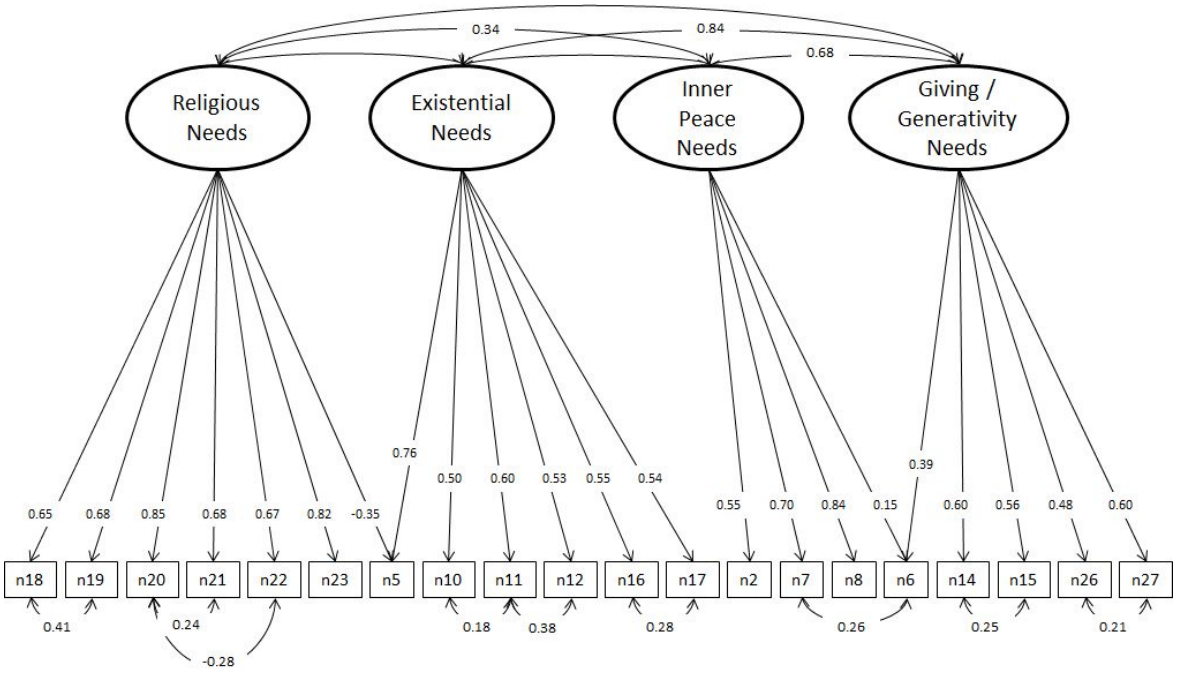

Figure 1. SEM model for pooled data. Values on arrows between items (in boxes) and factors (in circles) represent loadings, while items between boxes and circles, respectively, represent correlations.

3.6. Differences between the Mean Scores of Previous and Current Version of the SpNQ

The mean scores obtained on the previous SpNQ 2.1 version and on the new version (SpNQ-20) were comparable (Table 3), i.e., the *Religious Needs* mean scores were identical, the *Existential Needs* score was lower in the new version, the *Inner Peace Needs* was marginally higher, and the *Giving/Generativity Needs* was marginally lower in the new version. Thus, the largest differences in mean score were found in the *Existential Needs* subscale.

Table 3. SpNQ scores of previous and new version.

	Religious Needs		Existential Needs		Inner Peace Needs		Giving/Generativity Needs	
	Version 2.1	**New SpNQ-20**	**Version 2.1**	**New SpNQ-20**	**Version 2.1**	**New SpNQ-20**	**Version 2.1**	**New SpNQ-20**
Mean	0.51	0.51	0.55	0.48	1.21	1.23	1.09	1.00
SD	0.74	0.74	0.62	0.61	0.79	0.90	0.87	0.82

3.7. Profiles of Unmet Needs

As shown in Table 4, the mean scores differed significantly between non-ill ("healthy") persons and persons with chronic diseases, particularly on the *Existential Needs* and *Inner Peace Needs* subscales. There were also significant differences on gender and age with regard to the expression of spiritual needs, particularly on the *Religious Needs* subscale.

Table 4. SpNQ scores analyzed with respect to gender, age and sample.

		Religious Needs	**Existential Needs**	**Inner Peace Needs**	**Giving/Generativity Needs**
Healthy/Diseased					
Non-diseased (healthy) persons (n = 1468)	Mean	0.46	0.36	1.05	0.90
	SD	0.71	0.49	0.82	0.76
Chronically diseased persons (n = 627)	Mean	0.61	0.77	1.64	1.28
	SD	0.80	0.75	0.93	0.89
All persons (n = 2085)	Mean	0.51	0.48	1.23	1.01
	SD	0.74	0.61	0.90	0.82
F value		17.3	213.6	208.5	99.3
p value		<0.0001	<0.0001	<0.0001	<0.0001
Gender					
Women (n = 826)	Mean	0.78	0.64	1.49	1.18
	SD	0.84	0.67	0.87	0.85
Men (n = 1219)	Mean	0.32	0.37	1.04	0.88
	SD	0.60	0.53	0.86	0.77
All persons (n = 2045)	Mean	0.51	0.48	1.22	1.00
	SD	0.74	0.60	0.89	0.81
F value		209.2	103.3	137.0	66.8
p value		<0.0001	<0.0001	<0.0001	<0.0001
Age groups					
<31 years (n = 482)	Mean	0.78	0.64	1.49	1.18
	SD	0.23	0.31	0.92	0.71
31–40 years (n = 462)	Mean	0.48	0.45	0.78	0.68
	SD	0.30	0.38	1.18	0.83
41–50 years (n = 338)	Mean	0.56	0.53	0.87	0.73
	SD	0.44	0.49	1.28	1.03
51–60 years (n = 207)	Mean	0.69	0.65	0.98	0.84
	SD	0.56	0.72	1.62	1.25
61–70 years (n = 109)	Mean	0.74	0.76	0.95	0.85
	SD	0.80	0.75	1.62	1.49
>70 years (n = 373)	Mean	0.86	0.77	0.85	0.88
	SD	1.06	0.54	1.25	1.27
All ages (n = 1971)	Mean	0.89	0.57	0.82	0.81
	SD	0.51	0.47	1.22	1.00
F value		80.2	22.8	25.3	39.9
p value		<0.0001	<0.0001	<0.0001	<0.0001

Because all three variables (gender, age and disease vs healthy) had a significant influence on scores, we performed univariate variance analyses to test inter-subject effects with the SpNQ factors as dependent variables, producing the following findings:

- For *Religious Needs*, there were age ($F = 23.8$; $p < 0.0001$) and gender ($F = 13.4$; $p < 0.0001$) differences, but not disease/healthy differences ($F = 2.2$; $p = 0.139$). No significant interaction effects were present.
- For *Existential Needs*, there were significant gender ($F = 13.6$; $p < 0.0001$) and disease/healthy ($F = 7.8$; $p = 0.005$) differences, but differences in age were only at the trend level ($F = 3.0$; $p = 0.010$). There was a difference at the trend level for the combined effect of all three variables ($F = 2.9$; $p = 0.013$).
- For *Inner Peace Needs*, there were significant gender ($F = 13.8$; $p < 0.0001$) and disease/healthy ($F = 9.8$; $p = 0.002$) differences, but not for age ($F = 1.9$; $p = 0.096$). Again, there was a difference at the trend level for the combined effects of all three variables ($F = 2.7$; $p = 0.018$).
- For *Giving/Generativity Needs*, only a significant difference was found for age ($F = 7.9$; $p < 0.0001$), not for gender ($F = 3.5$; $p = 0.062$) or disease/healthy ($F = 1.7$; $p = 0.197$). There were no significant interaction effects for these three variables ($F = 2.1$; $p = 0.064$).

4. Discussion

The purpose of this study was to examine the psychometric properties of an instrument which is not only suited for persons with chronic diseases or alternatively only for those who are healthy, but also for use in both, persons with chronic diseases and in those who are healthy.

Compared to the previous version of the SpNQ (version 2.1), the *Religious Needs* factor did not change and was stable with its 6 items in all samples. The *Existential Needs* factor initially had five items and consists of six items now; item N4 (reflect back on your life) was deleted and items N5 and N17 were added. The *Inner Peace Needs* factor initially consisted of six items and is composed of four items now; item N5 was switched to the *Existential Needs* factor and N13 (turn to someone in a loving attitude) was removed. The *Giving/Generativity Needs* factor initially consisted of three items and now consists of four items; item N14 (give away something from yourself) was added. With this 6 + 6 + 4 + 4 item structure, which was confirmed by structural equitation modeling, the SpNQ-20 is better balanced compared to the previous version.

Two items are worth discussing. In persons with chronic diseases, item N2 (talk with someone about fears and worries) loaded weakly on two factors, *Existential Needs* and *Inner Peace Needs*. This means that talking with others about fears and worries can be a matter of life reflection and subsequent intention to let go of fears and worries, resulting in a state of inner peace. In healthy persons, this item clearly belonged to the *Inner Peace Needs* domain. Thus, because of its relevance and connection to states of peacefulness particularly in healthy persons, this item is best included as part of the *Inner Peace Needs* domain for the entire sample. In a similar vein, item N10 (finding meaning in illness and/or suffering) clearly belongs to the *Existential Needs* domain in persons with chronic disease, but also loaded weakly on the *Inner Peace Needs* domain in healthy persons. Thus, this item belongs best in the *Existential Needs* domain. The ambivalence of both items, however, should be considered in future studies.

A further interesting aspect is that the *Existential Needs* factor splits into two constructs when examined in elderly and healthy persons instead of persons with chronic diseases, i.e., into a domain of reflection and forgiveness and a domain of relieving talks with others. However, the internal consistency of both of these domains was too weak to be used as independent scales, and thus these six items were considered as one factor.

5. Associations with Spirituality and Quality of Life

In persons with chronic diseases, *Religious Needs* were strongly and *Existential Needs* moderately correlated with both religious Trust (SpREUK) and Search for spiritual support (SpREUK), while *Inner Peace Needs* and *Giving/Generativity Needs* were weakly to moderately related to Search or Trust (Büssing et al. 2013a; Offenbaecher et al. 2013). Thus, the scales *Religious Needs* and *Existential Needs* have clear spiritual/religious connections.

With respect to spiritual well-being (FACIT-Sp), it was found that the Faith subscale was strongly and positively related to *Religious Needs*, while the Peace subscale correlated moderately in a negative direction with *Inner Peace Needs* and *Existential Needs*, and the Meaning subscale correlated moderately in a negative direction with *Existential Needs* (Büssing et al. 2013a). The Meaning subscale was also weakly positively correlated with *Giving/Generativity Needs*. This suggests that the scales *Inner Peace Needs* and *Existential Needs* indicate a lack of something that is missing, while in contrast *Religious Needs* may indicate a positive resource which is principally available and one thus can call for.

Addressing quality of life associated variables in patients with chronic pain, it was found that *Inner Peace Needs* and *Existential Needs* were moderately associated with anxiety (and depression) (HADS) and with reduced mental health (SF-36), while *Religious Needs* and *Giving/Generativity Needs* were not significantly related to any mental health outcomes (Offenbaecher et al. 2013). In line with this finding, *Existential Needs* and *Inner Peace Needs* of German soldiers were moderately correlated with perceptions of stress (PSS) and with posttraumatic stress disorder symptoms (PCL-M), while *Religious Needs* and *Giving/Generativity Needs* were marginally to weakly related to these mental health indicators (Büssing and Recchia 2016). Furthermore, among elderly persons living in retirement homes, *Existential Needs* were moderately related to tiredness (ASTS) and *Inner Peace Needs* with grief and tiredness, while *Religious Needs* and *Giving/Generativity Needs* were weakly associated with emotional tiredness (Erichsen and Büssing 2013). This suggests that *Religious Needs* and *Giving/Generativity Needs* are not necessarily indicators of a reduced quality of life. Multivariate linear regression analyses revealed that tumor patients' anxiety (HADS) was the strongest predictor of *Existential Needs*, *Inner Peace Needs* and *Giving Needs,* while coherence (LAP-R) predicted *Religious Needs* and *Inner Peace Needs* (Höcker et al. 2014). However, patients' symptom scores (VAS) and pain disability (PDI) were not significantly related to any of the SpNQ scales (Büssing et al. 2013a).

With regard to interpretations of illness (IIQ) of persons with chronic pain diseases, *Religious Needs* were moderately associated with interpretations of illness as something of value, as a call for help, and as a relieving break from the demands of life; *Existential Needs* were moderately correlated with illness as something of value and as a relieving break from the demands of life (Büssing et al. 2013a). In contrast, *Inner Peace Needs* were weakly related to illness as both an interruption and something of value, and *Giving/Generativity Needs* were weakly correlated with illness as a call for help (Büssing et al. 2013a).

6. Conclusions

The SpNQ-20 provides researchers with a reliable and valid measure for use in comparative studies. Cultural and religious differences can be addressed using different language versions, assuming the SpNQ's structure is maintained (so far, the instrument is available in the following languages: German, English, Italian, French, Portuguese, Polish, Danish, Chinese, Indonesian, Farsi, Croatian, Lithuanian).

The Farsi version of the SpNQ (termed 'Spiritual Needs Assessment Scale of Patients with Cancer'), for example, has a 5-factorial structure (Hatamipour et al. 2018), i.e., the four main factors were retained and an additional culturally specific new fifth factor emerged and was called "Support and Nationalism", however, with a rather low internal consistency (Cronbach's alpha = 0.67).

The Portuguese version of the SpNQ differentiates *Religious Needs*, *Existentialistic Needs*, *Inner Peace*, *Actively Giving* and *Family Support Needs* (Valente et al. 2018). The items of the *Family Support Needs* scale are optional items which can be found in the SpNQ, but may not represent a specific 'spiritual' topic. Nevertheless, this domain is of high relevance and can thus be used as an additional scale.

The Chinese version of the instrument differentiates *Religious Needs* (with two subscales, Praying and Sources), *Reflection/Release Needs*, *Inner Peace Needs*, and *Giving/Generativity Needs* (Büssing et al. 2013b). Here, the scores of the *Reflection/Release Needs* (which uses only 3 items of the *Existential Needs* scale) might be less comparable than in other samples. The same is true for the Polish version of the SpNQ which also differentiates the four established domains (Büssing et al. 2015), but with only two items in its *Inner Peace Needs* domain.

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