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Including the spiritual dimension in the treatment of patients with affective disorders: validation of the spiritual distress and resources questionnaire (SDRQ)

Gerhard Stutz^{1,2*}, Florian Hotzy¹, Andrea Eisenhut¹, Franziska von Keyserlingk^{1,3}, Hanspeter Moergeli⁴, Simon Peng-Keller⁵ and Michael Rufer^{1,6}

Abstract

Background There is a lack of valid instruments for assessing spiritual resources and distress in the context of psychiatry and psychotherapy. To fill this gap, the newly developed Spiritual Distress and Resources Questionnaire (SDRQ) was studied in patients with affective disorders. The purpose of this study was to examine the psychometric properties of the SDRQ.

Methods The SDRQ was administered to 177 patients with affective disorders. Measurement properties including reliability, structural validity and construct validity were analysed. In addition, a sub-sample of 41 participants completed the SDRQ a second time to assess test-retest reliability.

Results Exploratory factor analysis confirmed that the 22 items of the SDRQ could be grouped into four subscales: spiritual distress, spiritual coping, immanence and transcendence. The spiritual distress, transcendence, immanence and spiritual coping subscales showed high internal consistency as indicated by Cronbach's alpha coefficients (0.83–0.88). The construct validity of the SDRQ was supported by meaningful and significant correlations with established measures in the field. In particular, higher levels of spiritual distress were strongly associated with higher scores on the Hospital Anxiety and Depression Scale.

Conclusion The results of this study suggest that the SDRQ is a reliable, valid and user-friendly screening tool for assessing spiritual distress, spiritual resources and spiritual coping in patients with affective disorders. The use of the SDRQ may be useful to adequately address and integrate spiritual aspects in a multimodal care approach.

Keywords Spiritual care, Questionnaire, Depression, Spirituality and religiosity

*Correspondence:

Gerhard Stutz
gerhardvalentinerik.stutz@uzh.ch

¹Department of Psychiatry, Psychotherapy, and Psychosomatics, Psychiatric University Hospital Zurich, Zurich, Switzerland

²Clinic SGM Langenthal, Research Institute for Spirituality and Health, Langenthal, Switzerland

³Clenia Schlössli AG, Oetwil am See, Zurich, Switzerland

⁴Department of Consultation-Liaison Psychiatry and Psychosomatic Medicine, University of Zurich, Zurich, Switzerland

⁵Professorship of Spiritual Care, Faculty of Theology, University of Zurich, Zurich, Switzerland

⁶Center for Psychiatry and Psychotherapy, Hospital Zugersee, Triaplus, Oberwil-Zug, AG, Switzerland



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Background

In 1984, the 37th World Congress of the World Health Organisation (WHO) decided to include the spiritual dimension in the definition of universal health care [1]. The importance of spirituality and religiosity in life is evident not only in the management of life-threatening events [2], in palliative care [3] or regarding pandemic management [4], but also in the presence of chronic diseases [5–8].

According to the recommendations of World Psychiatry Association [9] and the German Society for Psychiatry and Psychotherapy [10], spirituality and religiosity can be an important resource in dealing with mental illness [11, 12] and should routinely be considered in treatment. Previous studies highlight that spiritual coping mechanisms significantly influence mental health outcomes, as has been discussed in the concept of salutogenesis and resilience resources [13, 14]. Sense of Coherence could be a theoretical framework to describe how spirituality impacts psychological resilience and mental health [15], while other discuss correlations between self-esteem, anxiety and religious beliefs [16].

Therefore, further research should be undertaken to improve awareness of psychiatric patients' religious and spiritual needs.

By providing a balanced and effective spiritual assessment, including possible negative and positive effects of spirituality, the patient's needs in holistic treatment can be identified [17]. While the number of publications on spiritual care has multiplied over the past 40 years [18], there is still a lack of clearly defined assessments to capture this information in the medical field [19]. The development and use of the Spiritual Distress and Resources Questionnaire (SDRQ) could fill this gap. Until now, the validity and applicability of the SDRQ has only been demonstrated in patients with chronic pain [6]. The aim of the present study was to validate the SDRQ in psychiatric patients with affective disorders.

Methods

Questionnaire

The SDRQ has previously been designed as a self-rated instrument with 22 self-rated questions to assess spiritual resources (7 items), spiritual distress (8 items) and spiritual coping (7 items) [6]. In accordance with McSherry and Ross' definition [20], this assessment is (a) non-intrusive and easy-to-use, (b) independent of a specific spiritual-religious mindset, (c) using language to encourage for participation and (d) assuring a conceptual clarity for the spiritual dimension. Patients answer by using a six-point Likert scale, while a score of 1 means 'no' or 'not at all' and a score of 6 means 'yes' or 'completely'. The questionnaire concludes by asking whether spirituality should be considered in therapy.

Study design

A total sample of 220 patients was targeted (according to the recommendation of Anthoine et al. [21] to validate a scale with 22 items). Recruitment took place at the Department of Psychiatry, Psychotherapy, and Psychosomatics of the Psychiatric University Hospital in Zurich, after the study had been approved by the ethics committee of the Kanton Zurich. The study was registered with ClinicalTrials.gov (NCT05035199). Patients were recruited between 07/2021 and 09/2022 and signed an informed consent agreement. Inclusion criteria were (1) age between 18 and 80 years, (2) psychiatric diagnosis of an affective disorder, (3) existing interest in participating, and (4) sufficient knowledge of German. Exclusion criteria were (1) presence of psychotic or manic symptoms, (2) cognitive impairment, and (3) dependence on psychostimulants or hallucinogens. Clinicians reviewed inclusion and exclusion criteria and reported psychiatric diagnoses. The Participants answered the questions online after receiving a link by email.

The structural validity was explored to confirm dimensionality of the instrument for the use in psychiatric patients. Establishing reliability regarding internal consistency and test-retest reliability was considered important. To assess test-retest reliability, it was planned to administer the SDRQ a second time to a sub-sample of 60 randomly selected participants after an interval of three weeks (according to Anthoine et al., 2014).

Other measures

To assure construct validity of the SDRQ, correlation hypotheses were tested with convergent and discriminant measures. We selected the German versions of established instruments as in the previous research (Spirituality and Coping questionnaire "SpREUK", Sources of Meaning and Meaning in Life Questionnaire "SoMe", Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being "FACIT-Sp-12", Spiritual Needs Questionnaire "SpNQ", Quality of Life "EUROHIS-QOL", Revised Sense of Coherence "SOC-R", Short version of the Big Five Inventory "BFI-K", Hospital Anxiety and Depression Scale "HADS-D"). Please refer to the previous paper [6] for a detailed description of these instruments.

Cohen's established convention was used for the interpretation of relationship strengths (small: $r=0.1$, moderate: $r=0.3$, large: $r=0.5$) [22]. We hypothesised, as evidence of convergent validity, the SDRQ would show strong positive correlations ($r \geq 0.5$) with measures closely related, e.g. between the spiritual resources scales and the search, trust, and reflection scales of the SpREUK. We also expected a high negative correlation between spiritual distress and spiritual well-being in psychiatric patients as measured by the FACIT-Sp-12. For measures conceptually related somewhat to the new instrument,

such as sense of coherence (SOC-R) and general quality of life, we expected moderate correlations ($r=0.3-0.5$). Conversely, we anticipated weak correlations ($r<0.3$) with conceptually different measures, such as most scales of the BFI-K, to establish the discriminant validity.

Data processing and statistical analysis

REDCap (Research Electronic Data Capture) was used for data entry and monitoring [23], while statistical analyses were performed with IBM SPSS Statistics (Version 29). To test the conformity with the expected dimensional structure, an exploratory factor analysis of the SDRQ was performed using principal component analysis with varimax rotation. The appropriate number of factors was determined by examining the scree plot. Cronbach's alpha coefficients were calculated to assess internal consistency. Construct validity and test-retest reliability were assessed using Pearson's correlation coefficients.

Results

Participants

Finally a total sample of 177 patients filled in all questionnaires, 41 participants completed the re-test. The mean age of the patients studied was 38.5 years with a standard deviation of 11.9 years. Of these, 41.8% were male and 55.9% female. 2.3% identified their gender as diverse. Regarding their education, 45% had either 9 years of schooling or an apprenticeship. 52% of respondents had graduated at high school or received an advanced degree. 3% stated other education. Religious affiliation was self-identified as Christian for about 52%, while 41% described themselves as having no religion or being atheists. The remaining percentages were defined by Muslim, Jewish or other religious denominations. In two self-assessments with a scale from 0 to 10, 15.3% described themselves as religious, and 40.7% described themselves as spiritual individuals (scale values >5). Following this approach, 45.2% identified themselves as religious and/or spiritual (abbrev. R/S: $n=80$), while 54.8% identified themselves as neither religious nor spiritual (non-R/S: $n=97$).

In accordance with the ICD-10 classification, the primary diagnosis in 74.0% of the patients was depression (unipolar: $n=36$, recurrent: $n=89$, bipolar: $n=6$). 15.9% had stress-related disorders with depressive components ($n=29$), while the remaining 10.1% had anxiety or compulsive disorders and a secondary affective disorder ($n=17$). The median time since the first manifestation of the disease was approximately four years.

Structural validity: factor analysis

Table 1 shows the results of the exploratory factor analysis carried out on the 22 items of the SDQR. Scree plot analysis favoured a four-factor solution, and the initial

eigenvalues for these four factors were greater than 1. The factor loadings of the items were well-defined for most of the items of the questionnaire, except for items 1, 13, 16 and 18. To a smaller extent these items also loaded on a second factor. Representing the subscale of spiritual distress, the items 8–15 showed high positive loadings on factor 1. This factor accounted for the largest proportion (21.4%) of the total variance of the SDQR items. As expected, item 1–4 and item 5–7 loaded positively on two separate resources factors. In line with the content of the corresponding items and according to previous results, these factors were labelled as immanence and transcendence [6]. No subscale rearrangement was indicated

Subscale Analysis

Results showed high internal consistency for all four subscales (Table 1). Cronbach's alpha coefficients ranged from 0.83 to 0.88, indicating high reliability. Corrected item-total correlations showed a good interscale relationship between the individual items and their corresponding subscales. The positive items 'inwardly strengthening activities' and 'generativity despite illness' received the highest scores, while 'shattered faith' received by far the lowest score. The 'emotional suffering' in general was high. Furthermore, items in Spiritual resources from 5 to 7 have shown a lower score in comparison to items 1–4. In Spiritual coping the value of items 18–20 received higher results compared to items 16–17 and 21–22.

Test-retest reliability was found to be high for spiritual distress ($r=0.89$), spiritual coping ($r=0.81$), and transcendence ($r=0.80$), while it was satisfactory for immanence ($r=0.66$) (all $n=41$, $p<0.001$).

Construct validity

To assess the construct validity of the SDRQ, correlations with established measures in the field were examined (Table 2). The results supported the expected relationships between the SDRQ subscales and related constructs. Specifically, spiritual distress (SDRQ) showed strong correlations with crisis of meaning (SoMe-questionnaire) ($r=0.66$) and the spiritual well-being (FACIT-Sp-12) ($r=-0.59$). The SDRQ spiritual coping subscale showed high correlations with spiritual well-being (FACIT-Sp-12, $r=0.71$) and sense of meaningfulness (SoMe, $r=0.77$), underlining the close relationship between these constructs. Correlations between the other SDRQ subscales and meaningfulness and spiritual well-being ranged from 0.49 to 0.61, further highlighting their interrelatedness.

The positive correlation between FACIT-SP-12 scores and spiritual coping was stronger in the R/S subgroup ($r=0.74$) compared to the non-R/S subgroup ($r=0.57$). Similarly, the negative correlation between FACIT-SP-12 scores and spiritual distress was also stronger in the R/S

Table 1 Factor and subscale analysis of the SDRQ questionnaire in patients with affective Disorders ($N = 177$). Means and SD of the items are shown. An exploratory factor analysis was carried out on the 22 items of the SDRQ. Extraction Method: Principal Component Analysis, where only factor loadings > 0.40 are shown. Rotation Method: Varimax with Kaiser Normalization. The Rotation converged in 5 iterations. The eigenvalues of the four components were $\lambda_1 = 7.95$, $\lambda_2 = 3.45$, $\lambda_3 = 1.55$ and $\lambda_4 = 1.29$. The total variance explained by four factors = 64.4%

	Subscale Analysis		Principal Component Analysis			
			<i>spiritual distress</i>	<i>spiritual coping</i>	<i>Immanence</i>	<i>Transcendence</i>
Spiritual resources: immanence						
	Cronbach's alpha=0.83					
1. Inspiring places	4.15	± 1.83			0.65	0.45
2. Centering activities	4.41	± 1.56			0.79	
3. Moments of self-forgetting	4.21	± 1.64			0.78	
4. Inwardly strengthening activities	4.45	± 1.47			0.84	
Spiritual resources: transcendence						
	Cronbach's alpha=0.83					
5. In contact with transcendence	2.94	± 1.79				0.81
6. Participation in something greater	3.20	± 1.85				0.67
7. Meaningful practices of faith	2.83	± 1.89				0.81
Spiritual distress						
	Cronbach's alpha=0.88					
8. Lost meaning in life	2.99	± 1.66	0.67			
9. Shattered assumptions	3.17	± 1.72	0.69			
10. Loss of inner power	4.16	± 1.48	0.76			
11. Emotional suffering	4.50	± 1.43	0.77			
12. Cut off from life	4.03	± 1.70	0.79			
13. Shattered faith	2.26	± 1.59	0.55			0.44
14. Feeling of emptiness	3.52	± 1.66	0.74			
15. Desperation	3.45	± 1.70	0.74			
Spiritual coping						
	Cronbach's alpha=0.87					
16. Meaningful life despite all	3.47	± 1.54	-0.47	0.69		
17. Meaningful coincidence in life	3.50	± 1.54		0.72		
18. Generativity despite illness	4.31	± 1.19	-0.43	0.65		
19. Acceptance of illness	4.22	± 1.44		0.63		
20. Anchor in life despite illness	4.16	± 1.45		0.75		
21. Orientation in life	3.40	± 1.67		0.68		
22. Discovery of deeper life dimension	3.49	± 1.74		0.63		
			Variance explained after rotation			
			21.4%	18.1%	13.5%	11.4%

subgroup ($r = -0.71$) compared to the non-R/S subgroup ($r = -0.55$).

SDRQ-transcendence showed high correlations with Search and Trust (SpREUK) ($r = 0.76$ and $r = 0.72$), as well as high correlations with Religious Needs (SpNQ) ($r = 0.60$). SDRQ-immanence and SpREUK presented moderate to high correlations ranging from 0.45 to 0.57. Additionally, there were moderate correlations between SDRQ-immanence and the SpNQ subscales ($r = 0.30$ – 0.44). Similarly, positive correlations were observed between transcendence or immanence and self-assessments of spirituality and religiosity, ranging from 0.24 to 0.71. The Quality-of-life index (EUROHIS-QOL 8) showed negative correlation with spiritual distress ($r = -0.57$) and a positive correlation with spiritual coping ($r = 0.50$).

Sense of coherence revised (SOC-R), a measure of stress-related resilience, demonstrated fairly high correlations with spiritual coping and immanence ($r = 0.53$ and $r = 0.48$), providing insights into the nature of the resources indicated by these subscales. As anticipated, there were generally low to moderate correlations between the five factors of personality (BFI-K) and the SDRQ subscales, with the two exceptions: Openness correlated highly with immanence ($r = 0.52$), while neuroticism correlated with spiritual distress ($r = 0.44$).

There was a very high correlation between psychological distress (HADS-D) and spiritual distress ($r = 0.71$), while spiritual coping in SDRQ was negatively correlated with anxiety and depression on the HADS-D ($r = -0.63$). In this case, the correlation between spiritual distress and HADS-D was stronger in the R/S subgroup ($r = 0.76$) than in the non-R/S subgroup ($r = 0.64$). Similarly, the

Table 2 Correlations with established measures for assessing the construct validity of the SDRQ. To improve the analysis of the SDRQ, the R/S and non-R/S subgroups correlations have been added to the FACIT-Sp-12 and HADS-D

	Spiritual Distress	Spiritual Coping	Immanence	Transcendence
Self-assessments				
- I perceive myself as religious being	-0.08	0.24**	0.24**	0.50**
- I perceive myself as spiritual being	-0.16*	0.39**	0.50**	0.71**
Spiritual and Religious Attitudes in Dealing with Illness (SpREUK-15)				
- Search	-0.13	0.41**	0.52**	0.76**
- Trust	-0.18*	0.42**	0.45**	0.72**
- Reflexion	-0.23**	0.48**	0.57**	0.56**
Sources of Meaning and Meaning in Life Questionnaire (SoMe, rev.)				
- Meaning in life	-0.49**	0.77**	0.56**	0.54**
- Crisis in life	0.66**	-0.51**	-0.26**	-0.13
Spiritual Well-Being total (FACIT-Sp-12)				
• FACIT-Sp-12 of Group self-identifying as R/S	-0.71**	0.74**	0.41**	0.46**
• FACIT-Sp-12 of Group self-identifying as not R/S	-0.55**	0.57**	0.36**	0.34**
Spiritual Needs Questionnaire (SpNQ-20)				
- Religious Needs	-0.06	0.29**	0.30**	0.60**
- Existential Needs	0.13	0.12	0.34**	0.48**
- Need for Inner Peace	-0.08	0.14	0.44**	0.29**
- Need for Actively Giving	-0.02	0.23**	0.39**	0.39**
Sense of Coherence revised (SOC-R)				
Quality of Life (EUROHIS-QOL 8)	-0.57**	0.50**	0.36**	0.22**
Big five inventory, short version (BFI-K)				
- Extraversion	-0.21**	0.30**	0.19*	0.14
- Agreeableness	-0.07	0.03	0.06	0.00
- Conscientiousness	-0.25**	0.21**	0.30**	0.11
- Neuroticism	0.44**	-0.26**	-0.18*	-0.14
- Openness to experience	-0.18*	0.33**	0.52**	0.29**
Hospital Anxiety and Depression Scale (HADS-D)				
• HADS-D of Group self-identifying as R/S	0.71**	-0.63**	-0.36**	-0.24**
• HADS-D of Group self-identifying as not R/S	0.76**	-0.69**	-0.43**	-0.28*
• HADS-D of Group self-identifying as not R/S	0.64**	-0.55**	-0.34**	-0.08

(* = $P < 0.05$, ** = $p < 0.01$)

relationship between spiritual coping and HADS-D in the R/S subgroup ($r = -0.69$) was also stronger compared to the non-R/S subgroup ($r = -0.55$).

Discussion

The previously developed SDRQ, a self-rated screening instrument for spiritual resources and spiritual distress, was applied to patients with affective disorders. As in the earlier research on the SDRQ, structural and construct validity were demonstrated and subscale identification was successful. The two subscales immanence and transcendence were again identified and confirmed. In SDRQ immanence higher scores were found compared to transcendence. That could be because of the more widely formulated immanence items [6]. The results in the principal component analysis suggest reconsidering cross-loaded items. A removal of these questions, aligned with previous results, will lead to a more concise version of the questionnaire. This could improve the usability and participation in clinical settings.

The further analysis showed a pattern of correlations with other measures that was easy to understand. There was a high correlation between SDRQ spiritual distress and illness-related stress. Also, a high association between SDRQ spiritual distress and SoMe crisis of meaning and, as expected, further high correlations between SDRQ spiritual coping and FACIT-Sp-12 spiritual well-being were detected. In line with our expectations, general life satisfaction and spiritual distress were negatively correlated. In contrast, generic quality of life showed positive but slightly lower correlations with the other subscales of the SDRQ.

Comparing the subgroups (R/S and non-R/S) and their correlations to HADS-D and FACIT-Sp-12 the R/S subgroup demonstrated stronger relationships. This suggests that the SDRQ is sensitive to participants who are religious/spiritual, not only in terms of distress, depression and anxiety but also in terms of spiritual coping and well-being. At the same time, the correlations with HADS-D and FACIT-SP-12 are less pronounced for transcendence and immanence. This could be attributed to these two

aspects of the SDRQ being less directly related to disease, and also being more inclusive of non-religious/spiritual individuals.

The previously established three-items subscale of spiritual coping (items 18–20) was not supported by the principal components analysis, but there were notably higher scores in these items. This may be indicative of the more openly expressed secular imprint in these three questions and by their role as general, central coping factors. These results are an important step in adapting the questionnaire in the light of the first results to create the clinically applicable SDRQ's short version. As a spiritual assessment, it could help identify individual needs for holistic care, taking into consideration both the positive and negative effects of spirituality in disease [4, 17, 24, 25].

Limitations

The recruiting physicians recorded clinical ICD-10 diagnoses without performing any confirmatory diagnostic procedures. In general, psychiatric patients seemed to be more difficult to recruit and participate reliably: Compared to the 219 participants in the previous group of patients with chronic pain, we now had 177 valid and complete questionnaires, and 59 incomplete questionnaires. Furthermore, this study was conducted in the German part of Switzerland and the questionnaire has not yet been used in other regions. Future studies should also be carried out in other countries, and it would be highly desirable to study the usefulness of the SDRQ in primary care settings.

Conclusions

In summary, the results of this study suggest that the SDRQ is a valuable screening instrument for assessing spiritual distress, spiritual resources and spiritual coping in psychiatric patients with affective disorders. These results are similar to a previous study of patients with chronic pain [6]. A successful integration of spiritual resources— which can be easily assessed by the SDRQ regardless of the religious background of the patient or clinician, whether secular or religious— would be promising for appropriate treatment planning in universal health care according to the WHO resolution of 1984 [1, 26].

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Author contributions

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. The responsibilities of the team members were as follows:

Contributors to the conception and trial design: M.R., S.P.-K. & H. M. Responsible for the statistical analysis plan and data analysis: H.M., G.St. Writing of the manuscript and preparing Tables 1 and 2: G. St.

Were responsible for the clinical implementation of the trial: F.H., A.E., F. v.K., G. St. and M.R.

All authors have critically reviewed the manuscript for important intellectual content. We understand that the Corresponding Author is the sole contact for the Editorial process (including Editorial Manager and direct communications with the office). He is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

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Data availability

Data supporting this study are not publicly available due to ethical reasons. Please contact the first author (gerhardvalentinerik.stutz@uzh.ch).

Declarations

Ethics approval and consent to participate

The study had first been approved by the ethics committee of the Kanton Zurich, Switzerland. The study was registered at <https://www.clinicaltrials.gov/> under the Research-ID NCT05035199 (<https://www.clinicaltrials.gov/study/NCT05035199?cond=NCT05035199%26;rank=1>). All participating Patients signed an informed consent agreement.

Consent for publication

Not Applicable, there aren't any revealed information of the participants in this article. We confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript. Data supporting this study are not publicly available due to ethical reasons. Please contact the main author (gerhardvalentinerik.stutz@uzh.ch)

Competing interests

The authors declare no competing interests.

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References

1. World Health Assembly 37. <https://apps.who.int/iris/handle/10665/160950>. 1984 [cited 2024 Jun 18]. The spiritual dimension in the global strategy for health for all by the year 2000. Available from: <https://apps.who.int/iris/handle/10665/160950>
2. Giebner BJC. Spiritual care in the intensive care unit. *Neth J Crit Care*. 2017;25(2):60–1.
3. WHO. Key Facts: Palliative care [Internet]. [cited 2025 Jan 06]. Available from: <https://www.who.int/europe/news-room/fact-sheets/item/palliative-care>
4. Giannoulis V, Giannoulis K. Better Understand to Better Predict Subjective Well-Being Among Older Greeks in COVID-19 Era: Depression, Anxiety, Attitudes Towards eHealth, Religiousness, Spiritual Experience, and Cognition. In: *Advances in Experimental Medicine and Biology* [Internet]. 2023. pp. 359–64. Available from: https://link.springer.com/https://doi.org/10.1007/978-3-031-1986-0_35
5. Büssing A, Koenig HG. Spiritual needs of patients with chronic diseases. *Religions* (Basel). 2010;1(1):18–27.
6. Peng-Keller S, Moergeli H, Hasenfratz K, Naef R, Rettker H, Hefti R, et al. Including the spiritual dimension in Multimodal Pain Therapy. Development and validation of the spiritual distress and resources Questionnaire (SDRQ). *J Pain Symptom Manage*. 2021;62(4):747–56.
7. Klimasiński M, Baum E, Praczyk J, Ziemkiewicz M, Springer D, Cofta S et al. Spiritual distress and spiritual needs of chronically ill patients in Poland: a cross-sectional study. *Int J Environ Res Public Health*. 2022;19(9).
8. Giannoulis K, Giannoulis V. Subjective Quality of Life, Religiousness, and Spiritual Experience in Greek Orthodox Christians: Data from Healthy Aging and

- Patients with Cardiovascular Disease. In: *Advances in Experimental Medicine and Biology*. 2020. pp. 85–91.
9. Moreira-Almeida A, Sharma A, van Rensburg BJ, Verhagen PJ, Cook CCH. WPA position Statement on Spirituality and Religion in Psychiatry. *World Psychiatry*. 2016;15(1):87–8.
 10. Utsch M, Anderssen-Reuster U, Frick E, Gross W, Murken S, Schouler-Ocak M et al. DGPPN: Empfehlungen Zum Umgang Mit Religiosität Und Spiritualität in Psychiatrie Und Psychotherapie [German Association for Psychiatry, psychotherapy and psychosomatics: recommendations for dealing with religiosity and spirituality in Psychiatry and Psychotherapy]. 2016 Dec.
 11. Grober C, Heidenreich T, Rief W. Existenzielle Themen in Der Kognitiven Verhaltenstherapie [Existential themes in cognitive behavioral therapy]. *Psychotherapeut (Berl)*. 2016;61(3):229–36.
 12. Giannouli V, Giannoulis K. Gazing at Medusa: Alzheimer's dementia through the lenses of spirituality and religion. *Health Psychol Res*. 2020;8:47–52.
 13. Antonovsky A. Health, stress and coping. *Psychol Med*. 1981;11(1):206–206.
 14. Lucchetti G, Koenig HG, Lucchetti ALG. Spirituality, religiousness, and mental health: a review of the current scientific evidence. *World J Clin Cases*. 2021;9(26):7620–31.
 15. Jeserich F, Klein C, Brinkhaus B, Teut M. Sense of coherence and religion/spirituality: a systematic review and meta-analysis based on a methodical classification of instruments measuring religion/spirituality. *PLoS ONE*. 2023;18(8 August).
 16. Giannoulis K, Giannouli V, Religious Beliefs, Self-Esteem, anxiety and depression among greek Orthodox elders. *Anthropol Researches Stud*. 2020;10(1):84–92.
 17. Nissen RD, Falkø E, Stripp TK, Hvidt NC. Spiritual needs assessment in post-secular contexts: an integrative review of questionnaires. *Int J Environ Res Public Health*. 2021;18(24).
 18. Dimensions. [Software] available from <https://app.dimensions.ai>. under licence agreement. Digital Science [Internet]. [cited 2024 Jun 18]. Available from: <https://app.dimensions.ai>
 19. Büssing A. The Spiritual Needs Questionnaire in Research and Clinical Application: a Summary of Findings. *J Relig Health* [Internet]. 2021;60(5):3732–48. Available from: <https://doi.org/10.1007/s10943-021-01421-4>
 20. McSherry W, Ross L. Dilemmas of spiritual assessment: considerations for nursing practice. *J Adv Nurs*. 2002;38(5):479–88.
 21. Anthoine E, Moret L, Regnault A, Sbille V, Hardouin JB, Review. Sample size used to validate a scale: a review of publications on newly-developed patient reported outcomes measures. *Health Qual Life Outcomes*. 2014.
 22. Cohen J. *Statistical Power Analysis for the behavioral sciences*. Routledge; 2013.
 23. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)-A metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inf*. 2009;42(2):377–81.
 24. Yoon E, Cabirou L, Hoepf A, Knoll M. Interrelations of religiousness/spirituality, meaning in life, and mental health. *Couns Psychol Q* [Internet]. 2021;34(2):219–34. Available from: <https://doi.org/10.1080/09515070.2020.1712651>
 25. Salari N, Kazemina M, Abdi A, Abdolmaleki A, Abdoli N, Mohammadi M et al. Effects of counselling and spiritual care program on anxiety in patients with chronic diseases: a systematic review and meta-analysis. *Curr Psychol*. 2021;9943–52.
 26. Peng-Keller S, Winiger F, Rauch R. *The Spirit of Global Health*. Oxford University PressOxford; 2022.

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