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IN BRIEF REPORT

The Relationship between Quality of Life and Spirituality, Religiousness, and Personal Beliefs of Medical Students

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Abstract
Objective This study investigated the effects of spirituality, religiousness, and personal beliefs on the quality of life (QOL) of medical students affiliated with a religious faith and those without affiliation.
Methods Using a cross-sectional design, 275 medical students (78 % response rate) in their fourth and fifth year of study completed the WHOQOL-BREF quality of life instrument and the WHOQOL-SRPB module for spirituality, religiousness, and personal beliefs.
Results For religious students, a larger range of characteristics of existential beliefs were positively related to quality of life. For all students, hope and optimism and meaning of life predicted higher scores on psychological.
Conclusions For religious and nonreligious medical students, reduced meaning in life and hope were the strongest indicators of psychological distress. Interventions to improve the mental well-being of medical students may be more effective if aimed at teaching students how to find meaning and purpose in their lives and how to foster an enduring sense of hope and optimism.

Keywords Medical students · Quality of life · Religiousness · Spirituality · Personal beliefs

The function of spirituality and religiousness as a stress-coping mechanism is widely acknowledged [1]. Although earlier research tended to investigate the effects of religiousness in older adults and in times of very high psychological distress or terminal illness, more recent research has been documenting the beneficial effects of religiousness also in younger people and in people applying dispositional religious coping in response to mild to moderate levels of stress [2]. The role of religious coping is complex and is sometimes reported to be expressed in an adaptive problem-focused manner, sometimes in an adaptive and instrumental emotion-focused manner, and other times in a maladaptive-avoidant manner [3]. For university students, levels of religiousness and spirituality has been found to predict the way in which religious coping functions, such that highly spiritual individuals tend to use religious coping as a way of gathering psychological resources to confront the problem actively, while individuals with lower levels of spirituality were found to use religious coping in ways that avoid dealing directly with the source of the stressor [4].

Spirituality and religiousness are very closely related, often with overlapping meaning. For the purposes of the present study, we define "religiousness" as formal and organized sets of beliefs and practices, and "spirituality" as individuals' existential and personal beliefs that may or may not be related to a religious faith [5]. For medical education, spirituality and religiousness are relevant in two ways. On the one hand, future medical professionals need to be trained to be aware of existential concerns that their clients might present with and how to respond to invitations to discuss spirituality in clinical settings appropriately and respectfully. Training and awareness in this area has often been lacking, although, recently, systematic efforts to incorporate spiritual and religious issues are increasingly found [6]. Student attitudes toward the formal inclusion of spirituality in university curricula also tend to be positive, such as reported in a recent study of psychiatry residents in Canada [7]. On the other hand, spiritual, religious, and existential concerns are also relevant to students themselves as they search to find meaning in their own activities and develop resilience and effective stress-coping mechanisms. The highly demanding and stressful nature of medical studies is well known, and the concomitant effects on stress,

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mental health, and well-being are well documented. A systematic review by Dyrbye et al. [8] identified many challenges to medical students' quality of life (QOL), such as a higher prevalence of depression and anxiety compared to age-matched peers.

The purpose of the present study was to investigate the role of spirituality, religiousness, and personal beliefs on the QOL of medical students. Previous studies investigated the effects of spirituality and religiousness in samples of general university students [2] but very little is known about the role that spirituality and religiousness play in medical students' lives. Given the fact that religious coping is directly related to the extent of spiritual and religious beliefs [4], the present study compared religious with nonreligious medical students in the way in which specific aspects of their spiritual, religious, and personal beliefs, such as meaning, hope, and inner peace, are related to their QOL.

Method

Participants and Procedure

Participants were medical students in their fourth and fifth years of study at one of the two medical schools in New Zealand. The University of Auckland offers a 6-year undergraduate medical course that consists of 3 years of predominantly basic science training, followed by 3 years with focus on clinical teaching. The students recruited in the present study were in their first two clinical years.

With the permission from senior faculty, the researchers introduced the purpose and nature of the present study to students immediately before lecture time. Participation was voluntary and anonymous, and the response rate was 78 %. The study was approved by the university's institutional ethics committee and was part of a larger multi-method study on the effects of QOL on academic performance.

Measures

QOL was assessed using the generic short form of the World Health Organization quality of life questionnaire (WHOQOL-BREF), previously validated for use in New Zealand with medical students [9]. The WHOQOL-BREF has 26 items on a 5-point Likert scale, consisting of two items about global QOL and global health, as well as 24 items relating to each of the following four QOL domains: physical (7 items), psychological (6 items), social (3 items), and environmental QOL (8 items). For the purposes of the present study, domain scores were presented as item means.

Given the likely diversity of religious and nonreligious belief systems, the WHOQOL-spirituality, religiousness and personal beliefs (WHOQOL-SRPB) [10] was deemed as the most appropriate tool to assess spirituality and religiousness, as it captures a wide range of spiritual, religious, and personal beliefs that may or may not be aligned with any formal belief system or group. This 32-item questionnaire also uses a 5-point Likert scale and provides scores for eight separate facets, using the sum of four items each: connectedness to a spiritual being or force; meaning of life; awe; wholeness and integration; spiritual strength; inner peace/serenity/harmony; hope and optimism; and faith.

Results

Of the total of 275 students who participated, 127 were in their fourth year and 148 were in their fifth year of study; 156 were females, 118 were males, and 1 did not answer. The age range was 20 to 26 years, with a mean of 22.86 years. The two largest ethnic groups were European (41 %) and Asian (32 %), and 12 % were international students. The number of individuals affiliated with a religious faith was 156 (104 Christians, 18 Buddhists, 16 Hindus, 7 Muslims, 1 Jewish, and 10 others). The number of those indicating no affiliation was 117.

Table 1 shows mean WHOQOL-SRPB facet scores and WHOQOL-BREF domain item means separately for participants who were affiliated with a religious faith (n=156) and those who were not (n=117). Controlling for age, gender, student status, year of study, and ethnicity as co-variates, a MANCOVA yielded a significant effect of religious affiliation ($F(12, 246)=20.13$, $p<0.01$). Because Box's M test for

Table 1 Means and standard deviations of WHOQOL-SRPB facet scores and WHOQOL-BREF domain scores, presented separately for individuals affiliated with a religious faith and those with no affiliation

	Religious (n=156)		Nonreligious (n=117)	
	M	SD	M	SD
Connectedness	13.81**	4.69	6.69	3.64
Meaning of life	15.80**	3.26	13.46	3.55
Awe	14.54**	2.78	13.42	3.23
Wholeness	13.94**	2.94	11.60	3.36
Spiritual strength	14.02**	3.85	7.99	3.98
Inner peace	13.75**	3.10	12.62	3.38
Hope	14.75	2.92	14.49	3.19
Faith	14.21**	4.40	6.36	3.62
Physical QOL	4.04	0.50	4.08	0.56
Psychological QOL	3.66	0.58	3.57	0.62
Social QOL	3.83	0.65	3.72	0.79
Environmental QOL	3.79	0.60	3.82	0.49

**$p<0.01$

equality of variance was significant, the result was verified by non-parametric Mann–Whitney *U* tests adjusting for multiple tests (requiring $p<0.05/12$), and the same significant differences were obtained.

The relationships between the individual WHOQOL-SRPB facet scores, WHOQOL-BREF domain scores, and demographic variables were investigated separately for religious and nonreligious participants. Using a hierarchical multiple-linear regression, individual WHOQOL-BREF domain scores were used as outcome variables, predicted by WHOQOL-SRPB facets and demographic variables. The demographic variables gender, age, and student status were entered as the first step, followed by year of study, two ethnicity dummy variables (European versus Asian and European versus Other), and the WHOQOL-SRPB facets. Inspection of IVF values indicated some issues with multicollinearity (correlations ≥0.80 between connectedness, spiritual strength, and faith), and for that reason, connectedness and faith were excluded from these analyses.

For participants affiliated with a religious faith, a variety of WHOQOL-SRPB facets were significant predictors for WHOQOL-BREF domains (Table 2). Most notable were *awe*, which was a significant predictor for physical, social, and environmental QOL, and *hope,* which significantly predicted scores of psychological and social QOL. Spiritual strength was negatively associated with all QOL domains. For nonreligious participants, WHOQOL-SRPB facets were only significant predictors for physical and psychological domains. For the physical domain, awe was a negative predictor and wholeness positive, and for the psychological domain, hope and meaning of life both positively predicted QOL scores.

Discussion

Slightly more than half of the participants in the present sample indicated affiliation with a religious faith and their scores were higher than those of nonreligious participants on all facets of the WHOQOL-SRPB, except for hope. QOL domain scores, however, did not differ significantly between religious and nonreligious participants. Instead, WHOQOL-SRPB scores were linked to higher QOL domains (Table 2), indicating that the extent of spiritual, religiousness, and personal beliefs, but not religious affiliation, per se, is associated with increased QOL perceptions in medical students. This result is consistent with a large number of studies [1] that found that formal religious involvement is less predictive of psychological well-being than religious orientation. As opposed to individuals with an extrinsic religious orientation who have the tendency to be involved in religious activities to obtain tangible rewards such as social status and recognition, individuals with an intrinsic orientation and who thus view religion as an end in itself, are more frequently found to enjoy psychological health benefits.

The novel contributions of the present study were a detailed facet-level analysis of the effects of spirituality, religiousness, and personal beliefs on QOL, and an investigation of any differences between religious and nonreligious medical students. The beliefs of religious individuals tended to have positive effects on their QOL via provision of hope and optimism, as well as a sense of awe and appreciation for things in nature and their surroundings. Somewhat surprisingly, spiritual strength negatively predicted scores for all QOL domains for religious participants. This result is most likely explained by the way in which questions in this facet are worded. In

Table 2 Results from a hierarchical multiple-linear regression (proportion of variance explained, r^2, and standardized beta coefficient, β) with WHOQOL-BREF domains as outcome variables and with demographic variables and WHOQOL-SRPB facets as predictors. Regressions were conducted separately for the religious and nonreligious groups

	Religious			Nonreligious		
	r^2	Predictor	β	r^2	Predictor	β
Physical QOL	0.35	Awe	0.30**	0.34	Awe	−0.24*
		Meaning	0.27*		Wholeness	0.27*
		Strength	−0.60**			
Psychological QOL	0.61	Hope	0.27**	0.55	Female	−0.20*
		Meaning	0.35**		Year of study	−0.18*
		Peace	0.46**		Other ethnicity	0.17*
		Strength	−0.51**		Hope	0.30**
					Meaning	0.25**
Social QOL	0.45	Asian	−0.24**	0.25	Asian	−0.24*
		Awe	0.28**			
		Hope	0.44**			
		Strength	−0.27*			
Environmental QOL	0.35	Awe	0.27**	0.21	International	−0.20*
		Strength	−0.31*			

*$p<0.05$, **$p<0.01$

contrast to the facets awe, hope, meaning, peace, and wholeness, where questions inquire about positive aspects of beliefs (e.g., "To what extent are you grateful for the things in nature that you can enjoy?" or "To what extent do you have inner peace?"), questions in the facet spiritual strength had more to do with coping during times of stress (e.g., "To what extent do you find spiritual strength in difficult times?"). In the present sample, spiritual strength scores were highly correlated with scores on connectedness and faith. Also here, questions tend to be more about religious coping than spiritual well-being (e.g., "To what extent does any connection to a spiritual being help you get through hard times?" and "To what extent does faith give you comfort in daily life?"). The negative association between these facet scores with QOL scores thus do not necessarily imply that these aspects of spirituality and religiousness are maladaptive, but that these are coping strategies that are particularly evident in individuals who are currently experiencing stress [1, 11].

For medical students who tend to have a high likelihood of experiencing psychological distress [8], understanding the factors that influence their psychological QOL appears to be particularly appropriate. Students' sense of meaning and optimism in life may be challenged by the commonly reported experience of stress and intense emotions as a result from exposure to human suffering during training [8], although rewarding experiences, such as witnessing childbirth, are also frequently described as having significant long-lasting impact [12]. The present study found that, in both religious and nonreligious medical students, hope and optimism and meaning of life are aspects of existential beliefs that are positively related to psychological QOL and thus potentially protective against psychological distress. In other words, no matter whether a student's existential beliefs are based on a formal religious faith, whether beliefs are more informal and spiritual, or whether beliefs are based on a personal and general philosophy of life, the common underlying positive health benefits of these beliefs appear to be provided by giving the individual a sense of purpose and meaning, as well as hope and optimism for the future.

The implications for university student support systems [13] are thus that expressions of lack of meaning in life and lack of hope constitute particularly strong warning signs for existential and psychological distress. More formal integration of spirituality and religiousness into medical education [6] will likely encourage students to engage in critical reflection about their own existential beliefs and how these impact on their own QOL, thus enabling them to draw on a larger range of coping mechanisms. Skills learned from such self-reflection will also help students understand the perspectives of their future patients and prepare them to become well-rounded medical professionals who are able to adapt the full range of needs of their patients [14].

Implications for Educators

- In both religious and nonreligious medical students, lack of meaning in life and hope are the aspects of existential beliefs, which are the strongest indicators of psychological distress.
- Formal integration of spirituality and religiousness into medical education will likely encourage reflection on existential concerns and thus help develop skills to become medical professionals who are able to adapt to the full range of needs of their patients.

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References

1. Siegel K, Anderman SJ, Schrimshaw EW. Religion and coping with health-related stress. Psychol Health. 2001;16:631–53. doi:10.1080/08870440108405864.
2. Chai PPM, Krägeloh CU, Shepherd D, Billington R. Stress and quality of life in international and domestic university students: cultural differences in the use of religious coping. Ment Health Relig Cult. 2012;15:265–77. doi:10.1080/13674676.2011.571665.
3. Krägeloh CU. A systematic review of studies using the Brief COPE: religious coping in factor analyses. Relig. 2011;2:216–46. doi:10.3390/rel2030216.
4. Krägeloh CU, Chai PPM, Shepherd D, Billington R. How religious coping is used relative to other coping strategies depends on the individual's level of religiosity and spirituality. J Relig Health. 2012;51:1137–51. doi:10.1007/s10943-010-9416-x.
5. Zinnbauer BJ, Pargament KI, Scott AB. The emerging meanings of religiousness and spirituality: problems and prospects. J Pers. 1999;67:889–919. doi:10.1111/1467-6494.00077.
6. Koenig HG, Hooten EG, Lindsay-Calkins E, Meador KG. Spirituality in medical school curricula: findings from a national survey. Int J Psychiatry Med. 2010;40:391–8. doi:10.2190/PM.40.4.c.
7. Kattan W. Psychiatry residents' attitudes toward spirituality in psychiatry. Acad Psychiatr. 2013;37:360–2. doi:10.1176/appi.ap.13030027.
8. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. Acad Med. 2006;81:354–73. doi:10.1097/00001888-200604000-00009.
9. Krägeloh CU, Henning MA, Hawken SJ, Zhao Y, Shepherd D, Billington R. Validation of the WHOQOL-BREF quality of life questionnaire for use with medical students. Educ Health. 2011;24:1–5.
10. WHOQOL SRPB Group. A cross-cultural study of spirituality, religion, and personal beliefs as components of quality of life. Soc Sci Med. 2006;62:1486–97. doi:10.1016/j.socscimed.2005.08.001.

11. Park CL. Religion as a meaning: making framework in coping with life stress. J Soc Issues. 2005;61:707–29. doi:10.1111/j.1540-4560.2005.00428.x.
12. McLean M. Sometimes we do get it right! Early clinical contact is a rewarding experience. Educ Health. 2004;17:42–52.
13. Sayer M, Chaput De Saintonge M, Evans D, Wood D. Support for students with academic difficulties. Med Educ. 2002;36:643–50. doi:10.1046/j.1365-2923.2002.01259.x.
14. Weatherall DJ. The inhumanity of medicine. BMJ. 1994;309:1671–2. doi:10.1136/bmj.309.6970.167.