

## Research Article

# The Evaluation of the Relationship Between Spiritual Well-Being and Anxiety in Paramedical Students of Tabriz University

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Considering the importance of the relationship between spiritual Well-being and anxiety, a descriptive-correlational study was carried out on 184 paramedical students. Data collecting was done utilizing Paloutzian-Ellison spiritual health and Beck anxiety questionnaire. Afterward, data evaluation was conducted utilizing descriptive statistics, Pearson correlation, multiple regression, Z-Fisher tests, and SPSS software. Many of the students had either mild anxiety or no anxiety. There was a substantial connection between spiritual health and students' anxiety. A significant correlation was determined between existential Well-being and students' anxiety but not between spiritual health and the level of anxiety. Z Fisher's results indicated a substantial association between gender and moderate spiritual well-being in female students more than in males. Various regression evaluations showed that spiritual health and existential Well-being could expect the rate of anxiety. Finally, results revealed a rise in spiritual health and exceedingly existential health that can reduce students' anxiety at the beginning of hospital training.

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## Introduction

In university, students are exposed to several situations which strongly influence student's lifestyles related to a countless diversity of issues such as independent living, academic duties, interpersonal relations, and long hours of study that result in facing communal mental health issues like depression, stress, and anxiety <sup>[1][2]</sup>.

Some students can cope with this problem effectively, but not all of them <sup>[3]</sup>. Therefore, many university students' mental health might be at danger, and various mental problems, especially anxiety, are prevalent among students <sup>[4]</sup>. According to the studies, the frequency of depression among university students has been reported from 23.2% to 79%, the frequency of anxiety from 17.1% to 86.3%, and the prevalence of stress from 20.2% to 72.9% <sup>[5][6]</sup>. Due to prolonged symptoms of stress, depression, and anxiety, leads to disruption in students' performance at different stages of life, especially their academic life of them. It hinders their success and progress, and healthy living. Given the prevalence and adverse effects of these problems and also the importance of the critical role of students in various fields in shaping the future of the countries, it is evident that depression, anxiety, and stress are mental issues that should be overstated among university students <sup>[7][8]</sup>. Therefore, to determine effective preventive strategies, it is necessary to focus on the impact of factors such as spiritual health that could affect these problems, including anxiety.

Spiritual health is a dynamic, conscious, multidimensional process that plays a vital role in human health, affecting other health aspects, including mental, physical, and social. It leads to life's peace, harmony, and contentment <sup>[9]</sup>. Various studies have shown the relationship between spiritual health and coping abilities to perceive that God is a superior power and is present in all various aspects of life. Spirituality is one of the most critical dimensions of health that result in positivity, morality, and a positive relationship with God, and also it is considered a solution to problems <sup>[9][10]</sup>. Spiritual Well-being is one of the most imperative factors in adapting people to the tensions of everyday life, which also create a positive state of feelings, behavior, and cognition and motivates them internally, which in turn makes sense of identity, integrity, satisfaction, love, respect, harmony, purpose, and meaning in life <sup>[11][12]</sup>. Spiritual health includes two sub-types, namely existential and religious. Existential Well-being helps individuals find the meaning and goal of life, dreams, and the future, consequently improving their self-esteem and satisfaction with life in various statuses. In contrast, religious Well-being causes satisfaction

due to being related to a transcendent power <sup>[13][14]</sup>. Moreover, spiritual Well-being connects the mind and body of the individuals, society, intelligence, and health, supporting their attitudes and life aims <sup>[15]</sup>.

Therefore, it is self-evident that spirituality as a health dimension can influence coping mechanisms with anxiety and academic life challenges among students <sup>[16]</sup>. Anxiety is a natural reaction that leads to better dealing with the problems and challenges for achieving individual goals. However, high anxiety decreases their ability to face various situations effectively due to negative perceptions and considering many events as threatening and dangerous. Of course, it varies based on an individual's personality and reactions when facing life realities <sup>[17]</sup>. Researchers emphasize that a higher degree of stress and anxiety in students reduces their efficiency during clinical practices <sup>[1]</sup>. According to WHO, spiritual Well-being is considered one of the most critical aspects of health. A dimension of all human beings is crucial due to optimizing the other aspects of health, such as physical, social-emotional, intellectual, occupational, and environmental health <sup>[18][19]</sup>. On the other hand, many studies revealed considerable correlations between spiritual Well-being and other situations, such as anxiety, depression, self-esteem, life satisfaction, and temper <sup>[20][21]</sup>. Given that the academic environment and entering the university may lead to anxiety in undergraduate paramedical students and the critical role and effectiveness of spiritual Well-being in coping with various situations, it is relevant to investigate the relationship between spiritual Well-being and anxiety in this population.

## Methods

### *1. Study Design*

This study used a cross-sectional, correlational, and study design to evaluate the correlation between spiritual health and anxiety in paramedical students of Tabriz University of Medical Sciences.

### *2. Participants and Data Collection*

The ethics committee of Tabriz University in Iran approved this study's content and method. The population comprised third and last-year radiology and anesthesia students undergoing hospital internships in 2017-2019. Participants understood the objectives of this study and agreed to participate. They were composed of 184 students; 21 years old or older is the inclusion criterion. Due to the prevalence and pandemic of COVID-19, data were collected from April to July 2020 through electronic questionnaires and instructing participants to complete them after being informed about the purpose of the research.

Questionnaires consisted of demographic data, the Spiritual Well-Being Scale (SWBS) [22], and Beck Anxiety Inventory (BAI) [23]. Students were informed that the current study was not part of their course grades and that the answers would be processed confidentially. They explained that they could stop the study without penalty whenever they did not want to participate.

### *3. Measures*

#### *Demographic Data*

Researchers developed the questionnaire to identify the following variables: grade, gender, age, marital status, economic status, and place of residence.

#### *Spiritual Well-Being Scale*

Spiritual Well-being was measured with the tool developed by Paloutzian and Ellison [22] and adopted by Cheung et al. [24]. The scale is separated into two subscales: religious Well-being (RWB) and existential Well-being (EWB); each section is comprised of 10 items. The students responded to the questions in a Likert-type scale survey. The total SWBS score relates to the sum of the 20 scores and varies between 20 and 120. The scores are categorized as low (20-40), moderate (41-99), and high (100-120). On the two subscales, RWB and EWB, the scores vary from 10 to 20 (low), 21 to 49 (moderate), and 50 to 60 [25].

#### *Anxiety Inventory*

Beck, Epstein, Brown, and Steer made the BAI [23] a self-reporting instrument that determines the strength of anxiety symptoms, which was justified in Brazil, and the internal consistency was .87 in a population of university students [26]. The tool contains 21 items, and members are asked to respond to them on a 4-point Likert-type scale that replicates cumulative levels of severity for each symptom and how they were influenced by these symptoms: (0) not at all; (1) mildly: it did not bother me much; (2) moderately: it was very unpleasant, but I could stand it; (3) severely: I could barely stand it. The total score is the sum of individual item scores and is evaluated by the subsequent levels: 0 to 10 points (minimum level), 11 to 19 points (mild level), 20 to 30 points (moderate level), and 31 to 63 points [26].

#### *4. Data Analysis*

Data assessments were done with SPSS software (version 28.0.1). Participants' general characteristics, anxiety levels, and spiritual well-being were described as frequency and percentage as well as mean and standard deviation. Fisher's exact test analyzed the Association between the degree of anxiety and gender. Pearson's correlation coefficient was utilized to evaluate the degree of linear correlation between the SWBS and BAI scores. A logistic regression analysis estimated the correlation between anxiety and spiritual well-being.

#### *Ethical Issues*

The ethics committee of the paramedical faculty of Tabriz University of Medical Sciences of Iran approved the research. After the applicants had been notified about the study's significance, goals, and procedures, they were also given anonymity and confidentiality of the data. Then, an electronic consent form was filled out by all participants. Moreover, every step will be taken to preserve their anonymity so that students can fill out the questionnaire or leave it blank.

### **Results**

#### *Participants' General Characteristics*

Research samples included 184 radiology and anesthesia students of Tabriz University of Medical Sciences who completed their internship. Among the study applicants, 78 were male (42.4%), and 106 were female (57.6%). The median age of the 184 students was 21 years. A total of 73 participants were juniors (39.7%), and 111 were seniors (60.3%). The economic background was moderate for 78 (42.4%) applicants. The remaining socio-demographic characteristics are displayed in Table 1.

Characteristics	Categories	N (%)
Gender	Male	78 (42.4)
	Female	106 (57.6)
Marital status	Single	123 (66.9)
	Married	61 (33.1)
Grade	freshmen	73 (39.7)
	sophomores	111 (60.3)
	juniors	
	seniors	
Economic status	Poor	64 (34.8)
	Moderate	78 (42.4)
	Good	42 (22.8)
Place of residence	Alone	28 (15.2)
	Dormitory	86 (46.7)
	With the family	70 (38.1)

**Table 1.** General Characteristics of Participants (N=184)

Findings from this study revealed that most of the students had moderate spiritual health (64.6%) are reported in Table 2.

Dimension	High	Moderate	Low	M ± SD
Existential Well-being	66.8	93.1	0	28.4 ± 3.8
Religious Well-being	68.7	31.2	0	36.3±3.5
Spiritual Well-being	35.3	64.6	0	64.7±5.2

**Table 2.** Frequency distribution of spiritual Well-being and its subscales in students

*Note.* SWBS = *Spiritual Well-Being Scale*

According to the BAI, 42.8% of the students lacked anxiety, 27.8% scored mild, 21.7% scored moderate, and 7.41% scored severe levels. The minimum score was 0, and the maximum score was 63. The mean score of students' anxiety was also reported, and the frequencies and percentages obtained by the BAI in all participants are displayed in Table 3.

Degree of anxiety	Anxiety score range	Number	Score (%)	M ± SD
Lack of anxiety	0-7	63	42.8	3.4 ±2.2
Mild anxiety	8-15	41	27.8	11.1 ±2.2
Moderate anxiety	16-25	32	21.7	19.4 ±2.8
Severe anxiety	26-63	11	7.41	33.5 ±6.5

**Table 3.** Frequencies and percentages of students' anxiety scores

*Note.* BAI = *Beck Anxiety Inventory*

According to Pearson's correlation test, a significant and negative relationship was found between spiritual Well-being ( $r = -0.23$ ,  $P = 0.037$ ) and students' anxiety during entering internship. This means that the students with higher spiritual health experience less anxiety. Also, there is a negative and

significant relationship between existential health ( $r = -0.38$ ,  $P < 0.0001$ ) and anxiety. However, there is no significant relationship between religious Well-being and anxiety (Table 4).

	Existential Well-being	Religious Well-being	Spiritual Well-being
<b>Anxiety</b>	$r = -0.38$	$r = 0.06$	$r = -0.23$
<b>P value</b>	$<0.0001$	0.4628	0.0037
<b>Significant</b>	Yes	No	Yes

**Table 4.** Correlation between spiritual Well-being, its subscales and students' anxiety

*Note.* SWBS = *Spiritual Well-Being Scale*; BAI = *Beck Anxiety Inventory*

The multiple regression method was used to evaluate the effect of spiritual health on anxiety scores.

The results of multiple regression analysis showed that spiritual and existential health could predict the level of anxiety (Table 5).

Anxiety	Beta	Significance
<b>Existential Well-being</b>	-0.1357	0.0037
<b>Religious Well-Being</b>	0.02325	0.4628
<b>Spiritual Well-Being</b>	-0.1589	0.0001

**Table 5.** Regression analysis for anxiety according to spiritual Well-being and its subscales

*Note.* SWBS = *Spiritual Well-Being Scale*; BAI = *Beck Anxiety Inventory*

The two-tailed P value in Fisher's exact test equals 0.3141. The Association between lack or severe anxiety and gender is considered not statistically significant.



In Fisher's exact test, the two-tailed P value equals 0.0016. The Association between a moderate level of spiritual Well-being and gender is considered very statistically significant. The results of Fisher's exact test has been shown that the spiritual well-being average score in female students (68.08 %) was more than male students (40.38%) (Table 8).

Degree of anxiety	Anxiety score range	Number of female	Number of male
Lack of anxiety	0-7	40	23
Mild anxiety	8-15	30	11
Moderate anxiety	16-25	17	15
Severe anxiety	26-63	9	2

**Table 6.** Anxiety degree and gender

Degree of anxiety	Number of female	Number of male	P value
Lack of anxiety (0-7)	40	23	0.31
Severe anxiety (26-63)	9	2	

**Table 7.** Z Fisher association between degree of anxiety and gender

Spiritual Well-being	Number of male	Score of male (%)	Number of female	Score of female (%)	P value
Moderate (34-66)	21	40.38	64	68.08	0.0016
High (67-100)	31	59.61	30	31.91	

**Table 8.** Z Fisher association between spiritual Well-being and gender

## Discussion

In this study, most students (64.6%) achieved average spiritual well-being scores. This result is expected for our society due to its religious nature and inclination to spiritual values that can affect the results of studies. This observation aligns with previous research on Nursing and Midwifery students, who also scored moderately in spiritual health [27]. Anxiety state is related to various academic circumstances experienced by students, such as the course's characteristics, the dense activity schedule, lack of student awareness of the department and instructor, inadequate facilities, and inappropriate communication between professors and staff students. On the other hand, it is related to individual characteristics, and the way of dealing with anxiety is different, which has a noticeable effect on academic performance [28] [29]. In the current research, most students described a lack of anxiety (42.8%) or mild anxiety (27.8%), respectively, that was strongly and positively correlated with higher spiritual well-being. This finding is similar to other research conducted to evaluate the Association between spiritual Well-being and anxiety in nursing students [30]. The primary purpose of this study is to determine the relationship between spiritual health and anxiety during an internship, which resulted in a significant negative correlation between spirituality and anxiety. Studies have indicated that spiritual and religious beliefs are essential to health, particularly mental and anxiety reduction. The outcomes of several investigations have suggested that if individuals' religious beliefs are more, their mental illnesses, including anxiety disorders, will be less [31][32]. Another association was found between anxiety and EWB that showed students with a high level of EWB have a lesser probability of achieving an anxiety degree than students with low EWB. According to this study, EWB has an imperative role in reducing anxiety and has a significant correlation with it compared to r RWB which is consistent with previous findings [30]. The results of this analysis have shown that spiritual health and existential Well-being can predict the level of anxiety [30][33]. The finding showed that the spiritual health score percentage of female students was more than male students.

Moreover, spiritual Well-being and anxiety had a statistically significant relationship in female students, while this relationship was not significant in males. The results of several studies showed that women's spiritual health is more vital than men's spiritual health [34]. Furthermore, another study has shown that female students have higher spiritual health than male students [35][36].

## Limitations

This study was carried out with data from only one university's students, making it difficult to generalize the results to all university students. However, students at this university come from different regions of the country, and care was taken in the study design to maintain a balance among majors and regions.

## Conclusion

Regarding the importance of spiritual Well-being in reducing anxiety, paying attention to students' anxiety is necessary. The findings of this study suggest that university students with high spiritual Well-being are also likely to experience fewer anxiety symptoms. Training program facilitators should provide the appropriate educational content and environment to achieve this objective. Furthermore, it is essential to adopt effective educational strategies to promote the spiritual health of students during their studies.

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## References

1. <sup>a</sup> Song Y, Lindquist R. *Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. Nurse education today. 2015;35(1):86-90.*
2. <sup>Δ</sup> Zeng Y, Wang G, Xie C, Hu X, Reinhardt JD. *Prevalence and correlates of depression, anxiety, and symptoms of stress in vocational college nursing students from Sichuan, China: a cross-sectional study. Psychology, health & medicine. 2019;24(7):798-811.*
3. <sup>Δ</sup> Boyraz G, Horne SG, Owens AC, Armstrong AP. *Depressive Symptomatology and College Persistence among African American College Students. The Journal of general psychology. 2016;143(2):144-60.*

4. <sup>△</sup>Beiter R, Nash R, McCrady M, Rhoades D, Linscomb M, Callahan M, et al. The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of affective disorders*. 2015;173: 90–6.
5. <sup>△</sup>Ediz B, Ozcakil A, Bilgel N. Depression and anxiety among medical students: Examining scores of the beck depression and anxiety inventory and the depression anxiety and stress scale with student characteristics. *Cogent Psychology*. 2017;4(1):1283829.
6. <sup>△</sup>Saleh D, Camart N, Romo L. Predictors of Stress in College Students. *Frontiers in psychology*. 2017;8:19.
7. <sup>△</sup>Taylor MA, Neal AN, Schellinger J, Ostrowski S, White A, Rodriquez M, et al. Examining Change in Student Anxiety and Depression After the First Year of a Professional Program Secondary to Perceived Stress: A Cross-Sectional Descriptive Study. *Journal of Medical Education*. 2020;19(4).
8. <sup>△</sup>Asici E, Sari HI. Depression, Anxiety, and Stress in University Students: Effects of Dysfunctional Attitudes, Self-Esteem, and Age. *Acta Educationis Generalis*. 2022;12(1):109–26.
9. <sup>△</sup>Dhama K, Gupta R, Singla A, Patti B, Ali I, Niraj LK, et al. An Insight into Spiritual Health and Coping Tactics among Dental Students; A Gain or Blight: A Cross-sectional Study. *Journal of clinical and diagnostic research: JCDR*. 2017;11(8): Zc33–zc8.
10. <sup>△</sup>Aboalshamat KT, Alsiyud AO, Al-Sayed RA, Alreddadi RS, Faqiehi SS, Almehmadi SA. The relationship between resilience, happiness, and life satisfaction in dental and medical students in Jeddah, Saudi Arabia. *Nigerian journal of clinical practice*. 2018;21(8):1038–43.
11. <sup>△</sup>Ilali E, Taraghi Z, Yazdani J, Golmohammadi M, Savasari R, Mosavi Jarrahi A. The relationship between praying and spiritual health among Iranian older people with cerebrovascular accidents. *Iranian Journal of Ageing*. 2016;11(3):424–31.
12. <sup>△</sup>Mehri Nejad SA, Ramezan Saatchi L, Paydar S. Death anxiety and its relationship with social support and adherence to religion in the elderly. *Iranian Journal of Ageing*. 2017;11(4):494–503.
13. <sup>△</sup>Wang YC, Lin CC. Spiritual Well-being May Reduce the Negative Impacts of Cancer Symptoms on the Quality of Life and the Desire for Hastened Death in Terminally Ill Cancer Patients. *Cancer nursing*. 2016;39(4): E 43–50.
14. <sup>△</sup>Bai M, Lazenby M. A systematic review of associations between spiritual well-being and quality of life at the scale and factor levels in studies among patients with cancer. *Journal of palliative medicine*. 2015;18(3):286–98.
15. <sup>△</sup>Chou M-J, Tsai S-S, Hsu H-M, Wu H-T. Research on correlation between the life attitude and Well-being—with spiritual health as the mediator. *European Journal of Research in Social Sciences Vol*. 2016;4(3).

16. <sup>△</sup>Awadalla S, Davies EB, Glazebrook C. A longitudinal cohort study to explore the relationship between depression, anxiety and academic performance among Emirati university students. *BMC psychiatry*. 2020;20(1): 448.
17. <sup>△</sup>Ferreira CL, de Almondes KM, Braga LP, Mata ÁNd, Lemos CA, Maia EMC. Evaluation of trait and state anxiety in first year students. *Ciencia & saude coletiva*. 2009;14(3):973.
18. <sup>△</sup>Organization WH. WHOQOL and spirituality, religiousness and personal beliefs (SRPB). World Health Organization, 1998.
19. <sup>△</sup>Farahaninia M, Jadidi A, Janmohammadi S, Haghani H. 2625—Relationship between spiritual well-being and quality of life among elderly people residing in kahrizak senior house. *European Psychiatry*. 2013;28(S1): 1-.
20. <sup>△</sup>Safairad I, Karimi L, Shomoossi N. Relationship between spiritual Well-being and mental health in students. *Journal of Sabzevar University of Medical Science*. 2010;17(4):270-6.
21. <sup>△</sup>Leach MM, Lark R. Does spirituality add to personality in the study of trait forgiveness? *Personality and individual differences*. 2004;37(1):147-56.
22. <sup>△</sup>Paloutzian RFE, C.W. Loneliness, spiritual well-being and the quality of life. In *Loneliness: A Sourcebook of Current Theory. Research and Therapy*. 1982: 224-36.
23. <sup>△</sup>Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*. 1988;56(6):893-7.
24. <sup>△</sup>Cheung SD LJ, Park HB, Kim JS, Bai DS, Lee KH, et al. A study on reliability and validity of the Korean version of spiritual well-being scale. *Journal of Korean Neuropsychiatry Association*. 2001;40(2):230-42.
25. <sup>△</sup>Ai ALW, P; Paloutzian, R.F.; Harris, K.A. *Assessing Spirituality in a Diverse World*. Berlin/Heidelberg, Germany. 2021:431-44.
26. <sup>△</sup>Cunha J. *Manual em português das Escalas Beck [Portuguese manual of the Beck Scales]*. Casa do Psicólogo. 2001.
27. <sup>△</sup>Abbasi M, Farahani-Nia M, Mehrdad N, Givari A, Haghani H. Nursing students' spiritual Well-being, spirituality and spiritual care. *Iranian journal of nursing and midwifery research*. 2014;19(3):242-7.
28. <sup>△</sup>Chernomas WM, Shapiro C. Stress, depression, and anxiety among undergraduate nursing students. *International journal of nursing education scholarship*. 2013;10.
29. <sup>△</sup>Bayou MI MMM EM, mofereh AM, Assiri MAM, Al fesal AH. Evaluating Nursing Students' Anxiety and Depression during Initial Clinical Experience. *International Journal of Psychology and Behavioral Sciences*. 2012; 2(6):277.

30. <sup>a, b, c</sup>Fabbris JL, Mesquita AC, Caldeira S, Carvalho AMP, Carvalho EC. Anxiety and Spiritual Well-being in Nursing Students: A Cross-Sectional Study. *Journal of holistic nursing: official journal of the American Holistic Nurses' Association*. 2017;35(3):261-70.
31. <sup>Δ</sup>Vitorino LM, Lucchetti G. The Association between spirituality and religiousness and mental health. 2018; 8(1):17233.
32. <sup>Δ</sup>Hatamipour Kh RM, Yaghmaei F, Zendehdel K, Alavi Majd H. Development and psychometrics of "Spiritual Needs Assessment Scale for Patients with Cancer". Thesis for PhD degree in nursing at Shahid Beheshti University of Medical Sciences & Health Services 2015.
33. <sup>Δ</sup>Leung CH, Pong HK. Cross-sectional study of the relationship between the spiritual Well-being and psychological health among university Students. *PloS one*. 2021;16(4):e0249702.
34. <sup>Δ</sup>Magnano P ZA, Dibilio R, Faraci P. Italian validation of the jarel spiritual well-being scale. *Mental Health Religion Culture*. 2019;22: 626-44.
35. <sup>Δ</sup>Hammermeister J FM, Alayli A, Ridnour A, Peterson M. g. ender differences in spiritual Well-being: are females more spiritually well than males? *Am J Health Stud*. 2005;20(2):80-4.
36. <sup>Δ</sup>Sadeghi H AZ, Norouzi M. Assessment of Relationship between Mental Health and Educational Success in the Students of Qom. *Qom Univ Med Sci J* 2013;7(1):17-22.

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