Research article

The relationship between spiritual well-being and happiness among healthcare students: Application of the spiritual health questionnaire for the Iranian population

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A R T I C L E   I N F O

A B S T R A C T

Objectives: To investigate the relationship between spiritual well-being (SWB) and happiness in a sample of Iranian healthcare students, considering a culturally-adapted and a context-based measure of SWB.
Methods: In this descriptive-correlational study, 343 Muslim students of Qom University of Medical Science are studied from October 2017 to March 2018. Data collection tools were the culturally-adapted spiritual well-being scale (SWBS), the spiritual health questionnaire for the Iranian population (SHQ), and the Persian version of Oxford happiness inventory (OHI).
Results: Total scores of SWBS, SHQ, and OHI were in moderate (68.42 ± 12.76), high (193.74 ± 24.26), and moderate (37.95 ± 14.56) levels, respectively. Happiness had a significant positive correlation with all domains of SWBS and SHQ. Moreover, a significant proportion of happiness was determined by SWBS and SHQ. Also, some domains of SWBS and SHQ showed a significant correlation with age, gender, marital status, and academic major.
Conclusion: There was a significant correlation between happiness and SWB, measured by SWBS and SHQ. Hence, it seems that both SWBS and SHQ are sufficiently sensitive to assess the relationship between happiness and SWB.

1. Introduction

As the essence of human beings, spiritual well-being (SWB) and spirituality affect many aspects of our health, including mental health [1, 2]. Several studies reported that SWB is associated with both positive (i.e., happiness, hope, kindness, compassion, purpose in life, optimism, self-esteem, and gratefulness) and negative (i.e., depression, suicide, anxiety, psychosis, substance abuse, cigarette smoking, extra-marital sexual behaviors, delinquency/crime, and marital instability) mental health outcomes [3, 4, 5]. However, some studies reported that SWB can negatively affect mental health [6, 7].

According to the literature, SWB is a major contributor to happiness in many cultures [8, 9, 10]. In Iran, as the host to the largest population of Shia Muslims, there is an increasing interest to assess the relationship

between SWB and happiness [11, 12, 13], particularly in university students [14, 15, 16, 17]. However, few researchers have addressed this relationship in Iranian healthcare students. Recently, Jalilian *et al.* reported a significant positive correlation between SWB and happiness using the spiritual well-being scale (SWBS) and Oxford happiness inventory (OHI) in students of Kermanshah University of Medical Sciences, West of Iran [14].

The higher the number of measures in SWB, the better is the assessment of various domains [18]. In the past decade, the culturally-adapted SWBS has been considered as a common measure of SWB in Iran [1, 19, 20]. Although culture has a significant influence on the results obtained from SWB [22], according to the best knowledge of the authors, no study has investigated the relationship between SWB and happiness using an Iranian context-based SWB questionnaire yet. Recently several studies have used the spiritual health questionnaire (SHQ) for the Iranian

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population, an Islamic- and Iranian-based questionnaire for SWB assessment, especially among university students [21, 22, 23, 24].

To broaden the current knowledge of SHQ and also to better understand the relationship between SWB and happiness among Iranian healthcare students, we used SHQ in addition to SWBS and OHI to describe students' SWB and happiness and to evaluate the bivariate and multivariate relationship between SWB and happiness. Moreover, the SWB is analyzed based on the students' demographic characteristics.

2. Methods

2.1. Participants

This descriptive-correlational study was conducted on students of the Nursing & Midwifery and Paramedical schools of the Qom University of Medical Sciences, Qom, Iran, from October 2017 to March 2018. The exclusion criteria were as follows: 1) having a non-Muslim religion (Bahá'í faith and Christianity); 2) having a history of using psychoactive drugs; 3) confirmed diagnosis of chronic disorders; 4) having a family member with disability; and 5) experiencing a mental disorder during the past six months. Partially completed questionnaires were also excluded.

Students were selected using the stratified random sampling technique. So that students with similar majors (nursing, midwifery, operating room technology, anesthesiology, laboratory sciences, and emergency medical services) were allocated to a similar group, then simple random sampling was used to select students from each group, consistent with the size of the target population. Using the Eq. (1), the sample size was calculated as 330: α = 0.01, β = 0.1, and r = 0.210 [15].

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2}{(\frac{1}{2}Ln\frac{1+r}{1-r})^2} + 3 \Rightarrow n = \frac{(2.58 + 1.65)^2}{(\frac{1}{2}Ln\frac{1+0.210}{1-0.210})^2} + 3 = 330 \quad (1)$$

To consider the sample attrition and to increase the validity of the results, the sample size was increased to 360. In total 343 questionnaires were eligible for statistical analyses, 27 were excluded due to incompleteness.

2.2. Ethical considerations

The study is approved by the Research Ethics Committee of the Qom University of Medical Sciences (ethic No. IR.MUQ.REC.1396.42). All procedures were performed following the ethical standards of the local Ethics Committee and Helsinki declaration. First, the objectives of the study were explained to eligible students, then, if they were agreeing, written informed consent was obtained. Also, all students were assured about the confidentiality of their information. Besides, they were free to withdraw from the study at any time. Likewise, all students were assured that their participation would not affect their academic grades and/or evaluation.

2.3. Measures

2.3.1. Demographic questionnaire

A researcher-made questionnaire was used to collect demographic information, including age, gender, marital status, academic major, and academic degree.

2.3.2. SWBS

The SWBS, developed by Paloutzian and Ellison (1982) at the University of Idaho, is a general index of the subjective condition of well-being and perceived spiritual quality of life and contains 20 positive and negative items [25]. Each positive item should be answered on a six-point Likert scale, ranging from "strongly disagree" (score 1) to "strongly agree" (score 6). Conversely, each negative item is reverse-scored, ranging from "strongly agree" (score 1) to "strongly disagree" (score 6). Higher scores represent greater well-being. The

SWBS includes two subscales of "religious well-being (RWB)" and "existential well-being (EWB)" [26, 27].

- RWB subscale: This subscale consists of 10 odd-numbered items, which measure the individual's relationship with God. It consists of both negative (i.e., item No. 1: I don't find much satisfaction in private prayer with God) and positive items (i.e., item No. 3: I believe that God loves me and cares about me). The total score of RWB ranges from 10-60 and is categorized as low (a score of 10–20, which indicates a sense of unsatisfactory individual's relationship with God), moderate (a score of 21–49 which reflects moderate and positive views of the individual's relationship with God), and high (a score of 50–60 which indicates high and positive views of the individual's relationship with God) [26, 27].
- EWB subscale: This subscale consists of 10 even-numbered items, which refers to the horizontal dimension of well-being about the world about us. It includes components such as having a life purpose, having life satisfaction, being related to others, and the environment surrounding the person, with no specific religious word or concept. This subscale also has a combination of negative (i.e., item No. 2: I don't know who I am, where I came from, or where I'm going) and positive items (i.e., item No. 4: I feel that life is a positive experience). The total score of EWB ranges from 10-60 and is categorized as low (a score of 10–20, which indicates a low satisfaction with life), moderate (a score of 21–49, which indicates a relative lack of clarity about purpose in life), and high (a score of 50–60, which indicates a moderate and high level of satisfaction and purpose in life) [26, 27].

The total SWBS score is computed by summing up RWB and EWB scores, ranging from 20-120. The total score is categorized as low (score: 20–40), moderate (score: 41–99), and high (score: 100–120) [26,27]. The validity and reliability of the Persian version of SWBS are previously approved [1, 28]. Biglari Abhari et al. measured the reliability and validity of the scale in students of the Iran University of Medical Sciences and reported adequate validity and a Cronbach's alpha coefficient of 0.81, 0.84, and 0.89 for the RWB, EWB, and SWBS, respectively [1]. In the present study, the Cronbach's alpha coefficient of RWB, EWB, and SWBS was 0.76, 0.74, and 0.77, respectively.

2.3.3. SHQ

This Islamic-based questionnaire was developed for the Iranian Muslim population by Amiri et al. (2015) at the Spiritual Health Department of the Academy of Medical Sciences of Iran [29]. It consists of 48 items on a five-point Likert scale with two subscales of "insight/-tendency" (cognitive/emotional component) and "performance" (behavioral component).

- "Insight/tendency" subscale: It consists of 28 items, which evaluate the individual's insights/trends (attitude) over the last year about "relationship with God", "relationship with self", and "relationship with the surrounding" (i.e., item No. 1: The purpose of man's creation is to reach perfection). This subscale is scored using a five-point Likert scale, ranging from "strongly disagree" (score 1) to "strongly agree" (score 5). The total score of this subscale ranges from 28-140 and is categorized as low (score: 28–83) and high (score: 84–140) [21].
- "Performance" subscale: It consists of 20 items, which evaluate the individual's behavior over the last year about "relationship with God", "relationship with self", and "relationship with the surrounding" (i.e., item No. 30: For the sake of Allah, I avoid bribery, usury, gambling, and drinking alcohol). The scoring of this subscale is also based on a five-point Likert scale, ranging from "never" (score 1) to "always" (score 5). The total score ranges from 20-100 and is categorized as low (score: 20–59) and high (score: 60–100) [21].

The total score of SHQ is calculated by summing up the scores of each subscale, ranging from 48- 240. Higher scores indicate greater SWB and

the categorization of scores is as follow: 48–115 as low and 116–240 as high [21]. The content validity index (CVI) and the content validity ratio (CVR) of SHQ for the urban Iranian population are estimated as 0.85 and 0.80, respectively, and the Cronbach's alpha coefficients of "insight/-tendency" and "performance" subscales and SHQ were 0.95, 0.96, and 0.98, respectively [29]. In two recent investigations on Iranian health-care students, the Cronbach's alpha coefficients of SHQ were reported as 0.83 [22] and 0.95 [23], respectively. In the present study, the Cronbach's alpha coefficients of SHQ, "insight/tendency", and "performance" were 0.89, 0.83, and 0.84, respectively.

2.3.4. OHI

The OHI developed by Argyle *et al.* (1989) to measure personal happiness with five dimensions of "satisfaction with life", "self-esteem", "self-efficacy", "subjective well-being", and "positive mood". It includes 29 items that are answered on a four-point Likert scale ranging from "never" (score 0) to "always" (score 3) [30]. The total score ranges from 0-87, and the higher scores indicate greater happiness [31]. Based on the total score, happiness is categorized into three categories: low (score: 0–28), moderate (score: 29–57), and high (score: 58–87) [32]. In a study on undergraduate students, Alipoor and Noorbala (1999) approved the reliability and validity of the Persian version of OHI [33]. Liaghatdar *et al.* and Bayani reported adequate validity of the scale and a Cronbach's alpha coefficient of 0.93 and 0.92 among university students [34, 35]. In the present study, Cronbach's alpha coefficient was 0.91.

2.4. Data collection procedure

Before filling questionnaires, first, a brief explanation was provided to participants to make sure that they understood the questions. The questionnaires were filled using the self-reported method in an appropriate time either in the classroom or at home. Those who were willing to complete the questionnaires at home were asked to return the questionnaire at least two days before the deadline.

2.5. Statistical analysis

Data were analyzed using SPSS version 22 (SPSS, IBM© Corp., Armonk, NY, USA). A p-value < 0.05 was considered statistically significant. Descriptive statistics (i.e., mean, standard deviation, numbers, and percentage) were used to report demographic characteristics, SWB, and happiness. The Pearson correlation test was used to investigate the bivariate correlation between SWB and happiness. Moreover, the multiple linear regression was applied to evaluate the predictive role of SWB toward happiness. The Spearman and Pearson tests were applied to evaluate the correlation of demographic data with SWB. Also, SWB was compared in terms of demographic variables using the one-way analysis of variance or independent t-test.

3. Results

3.1. Demographic data

The mean age of the students was 23.89 ± 5.36 years and 254 (74.1%) of them were female. Most students (69.1%) were single and mostly (96.2%) were in the B.Sc. degree program. Most of them were studying operating room technology (38.8%), followed by anesthesiology (23.6%), nursing (18.4%), laboratory sciences (9.9%), and midwifery (5.5%). Also, 13 students were in the associate degree program of emergency medical services (3.2%) and the M.Sc. degree program of nursing (0.6%).

3.2. SWB and happiness status

The scores of SWBS, SHQ, and OHI are presented in Table 1. The total score of happiness was 37.95 ± 14.56, and 213 students (62.1%) had a

moderate level of happiness. The total scores of SWBS and SHQ were 68.42 ± 12.76 and 193.74 ± 24.26, and 339 students (98.8%) obtained a moderate score in SWBS, but 342 of them (99.7%) had a high score in SHQ.

3.3. Bivariate and multivariate relationship of SWB and happiness

Bivariate correlation of SWBS, SHQ, and OHI is shown in Table 2. Total score of OHI was significantly correlated with the total score of SWBS (r = 0.497, p < 0.001) and also subscales of EWB (r = 0.690, p < 0.001) and RWB (r = 0.245, p < 0.001). Moreover, the total score of OHI had a significant positive correlation with the total score of SHQ (r = 0.205, p < 0.001) and subscales of "insight/tendency" (r = 0.208, p < 0.001) and "performance" (r = 0.149, p = 0.007).

Based on the results of the multiple linear regression, SWBS (adjusted $R^2 = 0.524$, $F_{2, 340} = 190.07$, p < 0.001) and the SHQ ($R^2 = 0.044$, $F_{2, 340} = 7.879$, p < 0.001) predicted a significant proportion of happiness. As shown in Table 3, the EWB subscale significantly and positively predicted happiness (p < 0.001), whereas this prediction was negatively significant for the RWB subscale (p < 0.001). Moreover, "insight/tendency" subscale significantly and positively predicted happiness (p = 0.005), whereas the "performance" subscale did not predict it significantly (p = 0.523).

3.4. SWB and demographic variables

The bivariate correlation of SWBS and SHQ with demographic variables is shown in Table 4. All domains of SWBS and SHQ showed a significant and positive correlation with age (p < 0.001), whereas marital status and academic degree had a significant and negative correlation with SWBS and also SHQ in all domains (p < 0.05). Moreover, a significant and negative correlation was found between academic major and all domains of SWBS (p < 0.001), but this variable was significantly positive only for the "performance" subscale of SHQ (p = 0.035). Gender was correlated significantly and positively with all domains of SHQ (p < 0.001), whereas the relationship between this variable and SWBS was negative and significant in the RWB subscale (p = 0.077).

Students' SWB scores separated by demographic variables are shown in Table 5. Students with an associate degree, emergency medical services, and married status had significantly higher scores in all domains of SWB. The SWB was higher in male students compared to females; however, the difference was not statistically significant.

4. Discussion

The present study had two main objectives. Firstly, to describe the students' SWB using SWBS and SHQ and their happiness using OHI. Based on the findings, students had a moderate level of happiness. While, based on the SHQ and SWBS, SWB was high and moderate, respectively. These findings are somehow consistent with the results of previous students [14, 23, 28]. In line with our findings, Hezomi and Nadrian reported a moderate level of happiness and also the religious belief among a sample of Iranian female students [36].

Regarding the SWBS subscales, the RWB was higher than EWB, which is in line with the findings of previous studies on the Iranian healthcare students [14, 28]. Contrary to our findings, a study in Brazil reported higher scores for EWB than RWB [37]. A probable assumption for this difference is that Iranians pay more attention to the relationship with God, as expected in Muslim communities, therefore religious issues and spirituality are more valued in Iran [38]. However, more comparative studies are required to shed light on this assumption. Also, a significant and positive correlation was found between the total score of SWBS with its subscales, and a significant and positive relationship between RWB and EWB subscales. In other words, it was found that higher RWB scores indicate higher scores for EWB, which is consistent with a previous study conducted in Iran [28].

Table 1. Mean and standard deviation of the students' spiritual well-being and happiness.

	Status			Total
	Low	Moderate	High	
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Oxford happiness inventory (OHI)[1]	19.72 ± 5.64	41.75 ± 7.32	63.08 ± 5.83	37.95 ± 14.56
Spiritual well-being scale (SWBS)				
Religious well-being subscale[2]	0.0 ± 0.0	37.67 ± 5.52	52.25 ± 1.89	39.67 ± 7.21
Existential well-being subscale[2]	18.11 ± 2.44	30.23 ± 6.06	0.0 ± 0.0	28.75 ± 6.98
Total spiritual well-being[3]	0.0 ± 0.0	68.03 ± 12.30	101.75 ± 2.87	68.42 ± 12.76
Spiritual health questionnaire (SHQ)				
Insight/tendency subscale[4]	103.01 ± 10.89	-	126.76 ± 10.45	114.51 ± 15.97
Performance subscale[5]	72.52 ± 7.44	-	89.33 ± 7.68	79.23 ± 11.16
Total spiritual well-being[6]	110.0 ± 0.0	-	193.99 ± 23.86	193.74 ± 24.26

The higher scores indicate greater spiritual well-being or happiness.

[1] The total score ranges from 0-87 and is categorized as low (0–28), moderate (29–57), and high (58–87).
[2] Total score ranges from 10-60 and is categorized as low (10–20), moderate (21–49), and high (50–60).
[3] The score ranges from 20-120 and is categorized as low (20–40), moderate (41–99), and high (100–120).
[4] Total score ranges from 28-140, and is categorized as low (28–83) and high (84–140).
[5] Total score ranges from 20-100 and is categorized as low (20–59) and high (60–100).
[6] The score ranges from 48-240 and is categorized as low (48–115) and high (116–240).

Table 2. Correlation between the scores of the spiritual well-being scale, spiritual health questionnaire, and Oxford happiness inventory.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Oxford happiness inventory (OHI)	1						
Spiritual well-being scale (SWBS)							
(2) Religious well-being subscale	0.245*	1					
(3) Existential well-being subscale	0.690*	0.616*	1				
(4) Total spiritual well-being	0.497*	0.902*	0.895*	1			
Spiritual health questionnaire (SHQ)							
(5) Insight/tendency subscale	0.208*	0.692*	0.293*	0.552*	1		
(6) Performance subscale	0.149**	0.355*	0.100***	0.255*	0.585*	1	
(7) Total spiritual well-being	0.205*	0.619*	0.239*	0.481*	0.928*	0.846*	1

*$p < 0.001$ obtained by the Pearson correlation test.
**$p = 0.007$ obtained by the Pearson correlation test.
***$p = 0.063$ obtained by the Pearson correlation test.

Comparing the SHQ subscales revealed that the "insight/tendency" subscale was higher than the "performance" subscale. In addition, a significant and positive correlation was revealed between the total score of SHQ and its subscales, and the subscales were found to be significantly and positively correlated. In other words, higher scores in insights/trends (attitude) toward spirituality led to greater performance in this regard. Consistent with our findings, a previously conducted study in Iran reported higher scores for the "insight/tendency" subscale, compared to other subscales, and a significant and positive relationship between the two subscales of SHQ [23]. Moreover, in a study conducted on Iranian nurses, the "insight/tendency" subscale obtained higher scores, and the "performance" score was positively associated with "insight/tendency" [24]. However, in a nationwide study on Iranian Muslim patients, a negative linear correlation was observed between "insight/tendency" and "performance" subscales of SHQ [21]. The discrepancy could be attributed to the differences of participants and cultural issues.

As the second objective, the present study aimed to evaluate the correlation between SWB and happiness. A direct and significant

Table 3. Estimation of the students' spiritual well-being for happiness[†].

	Statistical indices					Collinearity statistics	
	B	SE	Beta	t	p*	Tolerance	VIF
Spiritual well-being scale (SWBS)							
Religious well-being subscale	- 0.585	0.096	- 0.290	- 6.121	<0.001	0.620	1.612
Existential well-being subscale	1.811	0.099	0.868	18.352	<0.001		
Spiritual health questionnaire (SHQ)							
Insight/tendency subscale	0.167	0.060	0.183	2.801	0.005	0.657	1.521
Performance subscale	0.055	0.085	0.042	0.640	0.523		

[†] Obtained by the Persian version of Oxford happiness inventory (OHI).
* Obtained by the multiple linear regression.

Table 4. Correlation of the students' spiritual well-being with demographic variables.

Domains Variables	Spiritual well-being scale (SWBS)						Spiritual health questionnaire (SHQ)					
	Religious well-being subscale		Existential well-being subscale		Total spiritual well-being		Insight/tendency subscale		Performance subscale		Total spiritual well-being	
	r	p	r	p	r	p	r	p	r	p	r	p
Age	0.400	<0.001*	0.310	<0.001*	0.396	<0.001*	0.268	<0.001*	0.205	<0.001*	0.271	<0.001*
Gender	-0.096	0.077**	0.574	<0.001**	0.882	<0.001**	0.698	<0.001**	0.309	<0.001**	0.590	<0.001**
Marital status	-0.294	<0.001**	-0.250	<0.001**	-0.281	<0.001**	-0.263	<0.001**	-0.237	<0.001**	-0.283	<0.001**
Academic degree	-0.268	<0.001**	-0.244	<0.001**	-0.267	<0.001**	-0.168	0.002**	-0.138	0.010**	-0.157	0.004**
Academic major	-0.217	<0.001**	-0.243	<0.001**	-0.276	<0.001**	0.011	0.842**	0.114	0.035**	0.057	0.292**

* Obtained by the Pearson correlation test.
** Obtained by the Spearman correlation test.

correlation was found between happiness and SWB, measured by SWBS and SHQ. In other words, the higher the students' SWB, the greater their happiness. These findings suggest good sensitivity of the SWBS and SHQ for assessing the relationship between happiness and SWB.

To the best of our knowledge, the present study is the first to investigate the correlation between SHQ and OHI. Based on the literature, we could not find any similar study in design to compare with our results. However, the findings support previous studies on the role of SWB in the happiness of students. In a similar study, a significant and positive relationship is reported between all domains of SWBS and OHI in a sample of Iranian healthcare students [14]. In another study, a positive and significant correlation was found between the scores of spiritual intelligence (King's spiritual quotient scale) and OHI among Iranian non-healthcare students [16]. Similarly, a positive correlation was reported between happiness (satisfaction with life scale) and

spirituality (daily spiritual experiences scale [DSES]) using a sample of medical students in the United States [39]. Accordingly, university authorities are recommended to inform the students about spirituality and SWB and their importance in happiness. Moreover, they should establish some strategies to promote the students' SWB to subsequently increase their happiness.

In contrast with our findings, some studies reported no relationship between SWB and happiness or reported a relationship only in some dimensions of SWB. In a study conducted on students, teachers, and administrative staff and managers of Iran University of Medical Sciences, it was indicated that the respondents who had a higher score in EWB, RWB, and SWBS reported significantly higher happiness assessed by OHI. However, OHI had no significant correlation with SWBS and its subscales [1]. This discrepancy can be attributed to the characteristics of the participants and using various definitions of SWB.

Table 5. Students' spiritual well-being separated by demographic variables.

Dimensions Variables	Spiritual well-being scale (SWBS)			Spiritual health questionnaire (SHQ)		
	Religious well-being subscale	Existential well-being subscale	Total spiritual well-being	Insight/tendency subscale	Performance subscale	Total spiritual well-being
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Gender						
Male	40.91 ± 7.15	29.14 ± 7.52	70.05 ± 13.24	116.71 ± 14.22	78.77 ± 10.00	195.49 ± 21.05
Female	39.24 ± 7.19	28.61 ± 6.79	67.85 ± 12.56	113.73 ± 16.49	79.40 ± 11.56	193.13 ± 25.30
p*	0.060	0.540	0.162	0.130	0.650	0.431
Marital status						
Single	38.21 ± 6.58	27.55 ± 6.19	65.77 ± 11.10	111.84 ± 15.34	77.67 ± 11.48	189.52 ± 14.13
Married	42.92 ± 7.52	31.44 ± 7.88	74.36 ± 14.21	120.47 ± 15.80	82.72 ± 9.58	203.19 ± 21.86
p*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Academic degree						
Associate's degree	50.38 ± 2.18	38.84 ± 8.22	89.23 ± 9.46	126.76 ± 12.72	86.69 ± 9.75	213.46 ± 20.51
Bachelor's degree	39.31 ± 7.01	28.43 ± 6.61	67.74 ± 12.13	114.00 ± 15.94	78.95 ± 11.16	192.95 ± 24.15
Master's degree	32.66 ± 3.05	20.00 ± 4.35	52.66 ± 7.23	117.00 ± 13.07	78.00 ± 7.93	195.00 ± 20.78
p*	<0.001	<0.001	<0.001	0.005	0.014	0.003
Academic major						
Anesthesiology	37.01 ± 4.93	27.61 ± 5.00	64.62 ± 7.60	107.97 ± 14.28	75.88 ± 9.89	183.86 ± 21.33
Operating room technology	45.08 ± 6.30	32.39 ± 6.88	77.48 ± 11.93	121.82 ± 15.57	80.87 ± 12.53	202.6 ± 24.74
Laboratory sciences	33.85 ± 3.18	25.76 ± 4.61	59.61 ± 5.64	104.00 ± 14.33	74.85 ± 9.35	178.85 ± 22.12
Nursing	34.81 ± 3.90	24.21 ± 4.49	59.03 ± 6.43	113.60 ± 11.96	82.04 ± 9.40	195.64 ± 18.47
Midwifery	34.05 ± 3.76	23.73 ± 6.69	57.78 ± 7.00	106.78 ± 15.74	77.10 ± 9.79	183.89 ± 14.61
Emergency medical services	50.27 ± 2.24	37.81 ± 8.47	88.09 ± 9.18	125.36 ± 12.93	84.81 ± 9.80	210.18 ± 20.08
p*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

**Obtained by the one-way analysis of variance.
* Obtained by the independent t-test.

According to the results of the multiple linear regression, the EWB was most important for happiness and the RWB was negatively associated with happiness. A study conducted on German students reported that personal SWB evaluated by the German version of the spiritual well-being questionnaire could predict the levels of subsequent happiness obtained by OHI [40]. In another study on Latina/o students enrolled in the United States, it was shown that daily spiritual experiences evaluated by DSES were significant predictors of subjective happiness assessed by the subjective happiness scale [41]. Moreover, a study conducted on Iranian students reported that spiritual intelligence was a positive predictor of happiness [16]. In the current study, EWB was found to be a potential co-founder in the relationship of RWB and happiness. When we adjusted the confounding effect of EWB, the positive correlation of RWB and happiness, which was found by bivariate correlation, was reversed, so that each unit increase in the RWB was associated with a 0.585 decrease in OHI score. Moreover, the significant and negative association between happiness and RWB may be justified by the innate condition of spirituality and the origin of SWBS. It worth noting that this scale is not specifically designed for Muslims, and RWB evaluates only the individual's relationship with God with 10 items, which most items are a common fact among Iranians. To better understand the relationship of SWB and happiness, we used the SHQ, as an Islamic native questionnaire for the Iranian community, and a positive relationship was found between happiness and two subscales of "insight/tendency" and "performance" in the linear regression model and also when running bivariate correlation.

Although the exact mechanisms of the correlation between SWB and happiness are not well explained, several studies suggested that spirituality and religiosity are correlated through behavioral, psychological, physiological, and social factors. From a behavioral perspective, individuals with higher spirituality and religiosity are often committed to a healthier physical and mental lifestyle such as moderation in eating, commitment to hard work, marital fidelity, altruism, and forgiveness; all of which are directly associated with subjective happiness through controlling their minds [16, 42]. Concerning the psychological view, individuals in religious cultural contexts remain happy and hopeful to a heavenly life with no more sufferings; because subjective spirituality and religiosity help them to give meaning to adversities and tensions that occur during lifecycle [16]. Based on a physiological perspective, participating in religious practices (i.e., prayer) is a means of relaxation, which can promote mental health outcomes such as happiness [21]. It was proposed that happier individuals may be more likely to regularly attend religious services, than those who are less happy [43]. From the social perspective, frequent attendance in religious institutions such as churches, temples, and mosques is shown to positively influence the happiness; because it can lead to more social support by increased intimacy and connection with others [42, 44]. A moderated mediation analysis indicated that higher levels of happiness in religious individuals could be explained by social sanctions and rewards that religious and non-religious individuals receive in their societies [45]. Besides, it's proved that religious individuals enjoy the health benefits of religiosity, if they receive a social valuation from their cultural context [46]. Ultimately, further studies are needed to better understand the mechanisms and pathways of action that correlate religiosity and spirituality with happiness.

4.1. Limitations

Using an Islamic- and Iranian-based questionnaire of SWB for the first time to evaluate the relationship between SWB and happiness are the main strengths of the present study. However, we are aware that the current study may have some limitations. First, the study was conducted on healthcare students in a Muslim population, therefore the results might not be generalizable to other groups, because there are other contributing factors (i.e., cross cultural differences and social contexts) that affect this relationship [45]. Second, the study had a descriptive-correlational design; hence, no cause-effect relationship could be established between SWB and happiness. Third, the self-reporting method of data collection, with students may potentially under/over report the issues.

5. Conclusion

A significant direct correlation was found between students' happiness and SWB, obtained by SWBS and SHQ. Accordingly, it seems that spirituality-based interventions could be helpful to promote the students' happiness; thus, future interventional studies are recommended to fully understand the role of SWB in the students' happiness. Moreover, it was revealed that both SWBS and SHQ are sufficiently sensitive to assess the relationship between happiness and SWB; however, because of its context-based nature, SHQ is a more appropriate measure for Iranian populations. Likewise, it seems that behavioral, psychological, physiological, and social mechanisms have a significant influence on the relationship between spirituality and happiness. However, further studies are needed to better understand the specific mechanisms and pathways of action that mediate SWB in happiness.

Declarations

Data availability statement

Data included in article.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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