المجلة الإلكترونية الشاملة متعددة التخصصات
العدد الثالث والعشرون شهر (٤) ٢٠٢٠

# The Role of Spiritual Intelligence, Age, Gender, and Specialization in Predicting University Students' Mental Health

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## Abstract

Objective: The present study was designed to examine the joint contribution of spiritual intelligence, gender, age, and specialization for predicting the mental health of university students and the relationship between mental health and spiritual intelligence who were studying at King Saud University in Riyadh. Participants: The survey was delivered in September, during the 2018-2019 academic year to a student sample comprised of (n=992) participants. 349 of these were male, and 643 were female. Method: The Pearson Correlation factor examined the relationship between mental health and spiritual intelligence. Also, Regression Analysis examined whether spiritual intelligence, gender, age, and specialization contribute to predicting mental health. The results revealed that there was a significant positive relationship between mental health and spiritual intelligence. Regression Analysis revealed, however, that spiritual intelligence, gender, age, and specialization as combined independent variables were significant predictors of mental health. Conclusions: The University is an essential environment to develop students' mental health, and spiritual intelligence is a significant aspect of mental health, so spiritual intelligence may act as a coping mechanism to help students to maintain or enhance their mental health. Subsequently, there is a need for more research about how spiritual intelligence strengthens students' mental health.

**Keywords**: Spiritual intelligence; Mental health; Spirituality; University students; Age; Gender.

# 1 | Introduction

## University students' mental health

Good mental health maintains psychological adjustment and supports self-adaption. Also, mental health contributes in reinforcing an individual's competence toward coping with life challenges and solving problems. For a student, navigating the university experience is an important stage in life. Academic demands are one of the challenges that could affect a student's mental health for the worse as they face fears, frustration, anxiety, and depression. Hunt & Eisenberg (2010) found in their study that 17% of students had depression and 10% had anxiety disorder including panic attacks.

Mental health among college students represents not only a growing concern but also an opportunity because of the large number of people who could potentially be reached during an important period of their lives. A study by Nami et.al (2013) has shown that %37.37 of the students were suspected of having mental disorders. Wyatt et.al (2017) found the differences in metal health diagnoses between first year and upper-level students. The results found that upper-level students were significantly more likely than first year students to be diagnosed with anxiety and depression. These findings explain that mental health is vital component for individuals, communities, and societies throughout the world (Sinha & Kumar, 2014).

## 1.1 | Mental health, Spirituality, and Spiritual Intelligence

According to the World Health Organization WHO (1998) " Mental health is a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community." In other words, the positive dimension of mental health is manifested in WHO's definition of health: "is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. " WHO also indicated "Patients and physicians have begun to realize the value of elements such as faith, hope and compassion in the healing process." The spiritual dimension includes these factors and goes beyond religious affiliation (Culliford, 2005). WHO realized the need of the fourth dimension of health, i.e. spiritual health, to be an important element of well-being. In this way, the spiritual dimension is a valid part of mental health (Singh et al., 2010). For a person to completely care for their mental health, they must attend to, and balance all dimensions which are physical, emotional, social, and spiritual. Therefore, any understanding of the relationship between spirituality and mental health exists within that integrative context (Cornah, 2006).

Cornah also agreed that spirituality could help people maintain good mental health. It can help them cope with everyday stress and can keep them grounded. Spirituality is "the aspect of human existence that gives it its humanness" (Swinton ,2001). In other words, it is a dynamic human activity that aims to express profound experiences of meaning and purpose of life, ultimate values, connecting with self, conception of God, and environment.

Spiritual intelligence is the measure of one's ability to use spirituality as a coping mechanism. The definition of spiritual intelligence relies on the concept of spirituality; hence, spiritual intelligence can be associated with mental health (Safara & Bhatia,

2013). Vaughan (2002) argues that spiritual intelligence emerges as consciousness evolves into an ever-deepening awareness of life, body, mind, and spirit. According to Emmons (2000) spiritual intelligence consists of a number of abilities and competencies that may be part of a person's expert knowledge and usage as spiritual sources, which can lead to adaptive problem-solving behaviour. In separate studies, he and another researcher Kathleen Noble delineated key characteristics thought to be at the core of spiritual intelligence. Emmons suggested five core characteristics that may define spiritual intelligence: "(1) the transcendence, (2) the heightened spiritual states of consciousness, (3) conferring everyday activities with a sense of the sacred, (4) utilizing spiritual resources to solve problems, (5) engaging in virtuous behaviour (such as forgiveness, gratitude, humility, compassion)" (p.64). Then, Noble adds two additional features: the conscious recognition that physical reality is embedded within a larger, multidimensional reality, and the choice to develop psycho-spiritual awareness in order to promote the health of both the individual and the community (Green & Noble, 2010).

The evidence to support these theories of the links between spiritual intelligence and improvements in people's mental health are currently being explored in a number of ways. Charkhabi et al. (2014) revealed that spiritual intelligence training is able to decrease psychological disorders and to improve the experienced level of mental health. Tabarsa & Jalaei (2015) showed that there is a positive correlation between spiritual intelligence and mental health. Dash & Patnaik (2015a) showed the group, which has high spiritual intelligence, is emotionally more intelligent, and they have better mental health than those with low spiritual intelligence. Bozorgi & Bozorgi (2016) indicated that there is a significant and negative relationship between low spiritual intelligence and mental disorders among students, and that this spiritual intelligence could

significantly predict 14% of mental health variance. Shateri et al., (2018) indicated that a higher level of spiritual intelligence leads to higher level of teachers' mental health.

Some studies examined the impact of gender, age and specialization in mental health and spiritual intelligence such as Pant & Srivastava's 2017 study which showed that no significant difference was found between gender and educational background (arts and science) in terms of spiritual intelligence and mental health among college students. Shabani et al. (2010) indicated that the moderating effect of age upon the relationship between spiritual intelligence, emotional intelligence, and mental health was not found. In other words, the relationship between these three dimensions retained integrity at any age between14-17. Desai (2016) indicated that both gender and age have significant impact on the spirituality and psychological well-being of adults. Dash & Patnaik (2015b) examined the relationship among mental health, emotional intelligence, and spiritual intelligence from a gender perspective, and the findings showed that mental health in females is predicted by spiritual intelligence variables more than in males.

The purpose of study is to investigate the contribution of spiritual intelligence, gender, age, and specialization for predicting the mental health of university students. In addition, the current study aims to explore the relationship between mental health and spiritual intelligence and the differences in mental health across age, gender, and specialization.

## 1.2 | Hypotheses

The following hypotheses guided the review:

1H) There is an effect of the independent combined variables (spiritual intelligence, gender, age, and specialization) in interpreting the level of sample behaviour in the mental health variable.

2H). There is a statistically significant relationship between the sampled scores of the Mental Health Scale (MH) and the Spiritual Intelligence Scale (SQ).

3H) There are statisically significant differences of scalable mental health scores among students between of the variables of gender, age, and specialization.

# 3 | Methods

## 3.1 |Participants and procedure

All students of King Saud University in Riyadh were invited to take the survey and participate so the study analysed data that was collected from students of King Saud University in Riyadh. The students were polled by a random sampling technique by which they were sent the link of the scales via email for all the students. The sample is comprised of 992 students: out of 349 were males and 643 were females. Variables of the study were mental health, spiritual intelligence, age, gender, and specialization.

## 3.2 | Measures

Three questionnaires were used for the purpose of gathering this data. The first questionnaires was the Integrated Spiritual Intelligence Scale by Amram & Dreyer (2008\2013) comprised of 83 items, six multiple-choice questions, and these pertaining to five dimensions (consciousness, grace, meaning, transcendence, and truth). These dimensions were further divided into 22 sub dimensions. The second questionnaire was a Mental Health Scale by Makawi (2015) which was comprised of 56 items and

included three multiple choices. Thirdly, the researcher measured the general data, which was defined as gender, age and specialization, with a questioner.

## 4 | Results

The average of age in this sample was (33.35) and SD was (9.13). The highest frequency of age intervals was 18-20 years old. For specialization it was business (92) Table 1, females represent the majority of the sample (64.8%), and about (41,2%) of sample are common first year students.

The researcher analysed the validity and reliability of the SQ and MH scales and the result showed that internal consistency validity of the SQ and MH scales were valid and at level (0.01). Also, the researcher used Cronbach's Alpha to measure reliability, and this showed that data collection instruments were reliable at (0.947) for the SQ scale, and at (0.949) for MH scale Table 2,3.

To examine the first hypothesis of the independent combined variables, the researcher used the regression analysis and the results showed that the total correlation coefficient was a positive. These results mean there was a statistically significant positive relationship between mental health and the independent combined variables Table 4. Also, the value of the Coefficient of Determination / Interpretation (R Square) is 0.307. This means the relationship between the variables depend on each other by 30.7%. However, the value of calculated (F) is statistically significant at ($\alpha \leq 0,01$).
This finding suggests that independent combined variables contributed to the prediction in the mental health variable. The values of calculated (T) test were statistically different at ($\alpha \leq 0,01$) with the (spiritual intelligence and specialization variables), the values of calculated (T) test weren't statistically different at ($\alpha \leq 0,01$) which were (age

and gender variables). Also, it can determine the equation relationship prediction as following: MH = 30.76 + 0.212 SQ + 0.668 specialization+ 1.076 Gender -0.272 Age

To test the second hypothesis of relationship between the mental health and Spiritual Intelligence Scales, the Pearson Correlation Coefficient R was used and showed that the Pearson Correlation Coefficient was positive with an average value.

This indicates that there is a statistically significant positive relationship between the scores of the sample in the Mental Health (MH) and the Spiritual Intelligence Scales (SQ). Also, the value of (R Square) is 0.266. This indicates 26.6% of the common variance is due to the relationship between the two variables MH× SQ, or that the variables MH× SQ depend on each other by 26.6%.

**Table 1.** Description of sample according to the age, specialization and gender.

| **The age Intervals** | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
|---|---|---|---|---|
| 18-20 | 632 | 63.7 | 63.7 | 63.7 |
| 21-24 | 227 | 22.9 | 22.9 | 86.6 |
| 25-27 | 42 | 4.2 | 4.2 | 90.8 |
| 28-30 | 27 | 2.7 | 2.7 | 93.5 |
| 31-33 | 28 | 2.8 | 2.8 | 96.4 |
| 34-36 | 15 | 1.5 | 1.5 | 97.9 |
| 37-39 | 12 | 1.2 | 1.2 | 99.1 |
| 40-42 | 6 | .6 | .6 | 99.7 |
| 43-45 | 2 | .2 | .2 | 99.9 |
| 46-48 | 1 | .1 | .1 | 100.0 |
| Total | 992 | 100.0 | 100.0 | |
| **Average of age** 33.35 | SD. 9.13 | | | |
| **Specialization of colleges** | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Present** |
| Education | 73 | 7.4 | 7.4 | 7.4 |
| Literature | 65 | 6.6 | 6.6 | 13.9 |
| Business | 92 | 9.3 | 9.3 | 23.2 |
| IT | 47 | 4.7 | 4.7 | 27.9 |
| Law | 41 | 4.1 | 4.1 | 32.1 |
| Language | 34 | 3.4 | 3.4 | 35.5 |
| Tourism | 3 | .3 | .3 | 35.8 |
| Nursing | 30 | 3.0 | 3.0 | 38.8 |
| Pharmacy | 21 | 2.1 | 2.1 | 40.9 |
| Medical | 20 | 2.0 | 2.0 | 42.9 |
| Science | 50 | 5.0 | 5.0 | 48.0 |
| Nutrition | 13 | 1.3 | 1.3 | 49.3 |

| | | | | |
|---|---|---|---|---|
| Medical applied | 41 | 4.1 | 4.1 | 53.4 |
| Dentist | 11 | 1.1 | 1.1 | 54.5 |
| IT Applied Studies & Social Service | 10 | 1.0 | 1.0 | 55.5 |
| Applied Studies& Social Service Diplomas | 32 | 3.2 | 3.2 | 58.8 |
| Common Frist Year | 409 | 41.2 | 41.2 | 100.0 |
| Total | 992 | 100.0 | 100.0 | |
| **Gender** | **Frequency** | **Present** | **Valid Present** | **Cumulative Present** |
| Male | 349 | 35.2 | 35.2 | 35.2 |
| Female | 643 | 64.8 | 64.8 | 100.0 |
| Total | 992 | 100.0 | 100.0 | |

**Table 2.** Internal Consistency Validity of the SQ and MH scales

| **Items of SQ scale** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.54** | 15 | 0.51** | 29 | 0.54** | 43 | 0.63** | 57 | 0.60** | 71 | 0.62** |
| 2 | 0.45** | 16 | 0.48** | 30 | 0.53** | 44 | 0.44** | 58 | 0.46** | 72 | 0.61** |
| 3 | 0.69** | 17 | 0.58** | 31 | 0.71** | 45 | 0.52** | 59 | 0.45** | 73 | 0.50** |
| 4 | 0.72** | 18 | 0.52** | 32 | 0.56** | 46 | 0.51** | 60 | 0.58** | 74 | 0.74** |
| 5 | 0.51** | 19 | 0.63** | 33 | 0.53** | 47 | 0.56** | 61 | 0.41** | 75 | 0.44** |
| 6 | 0.74** | 20 | 0.49** | 34 | 0.44** | 48 | 0.47** | 62 | 0.51** | 76 | 0.63** |
| 7 | 0.52** | 21 | 0.46** | 35 | 0.73** | 49 | 0.58** | 63 | 0.54** | 77 | 0.49** |
| 8 | 0.48** | 22 | 0.47** | 36 | 0.52** | 50 | 0.52** | 64 | 0.53** | 78 | 0.73** |
| 9 | 0.81** | 23 | 0.48** | 37 | 0.65** | 51 | 0.47** | 65 | 0.48** | 79 | 0.62** |
| 10 | 0.57** | 24 | 0.43** | 38 | 0.49** | 52 | 0.57** | 66 | 0.47** | 80 | 0.53** |
| 11 | 0.79** | 25 | 0.58** | 39 | 0.51** | 53 | 0.53** | 67 | 0.74** | 81 | 0.68** |
| 12 | 0.49** | 26 | 0.49** | 40 | 0.53** | 54 | 0.52** | 68 | 0.54** | 82 | 0.52** |
| 13 | 0.72** | 27 | 0.65** | 41 | 0.59** | 55 | 0.45** | 69 | 0.55** | 83 | 0.61** |
| 14 | 0.83** | 28 | 0.47** | 42 | 0.54** | 56 | 0.58** | 70 | 0.79** | | |
| **Items of MH scale** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** | **Items** | **R** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.43** | 11 | 0.63** | 21 | 0.59** | 30 | 0.52** | 39 | 0.72** | 48 | 0.55** |
| 2 | 0.78** | 12 | 0.49** | 22 | 0.65** | 31 | 0.58** | 40 | 0.68** | 49 | 0.70** |
| 3 | 0.73** | 13 | 0.68** | 23 | 0.63** | 32 | 0.72** | 41 | 0.65** | 50 | 0.67** |
| 4 | 0.69** | 14 | 0.65** | 24 | 0.74** | 33 | 0.53** | 42 | 0.73** | 51 | 0.49** |
| 5 | 0.61** | 15 | 0.71** | 25 | 0.41** | 34 | 0.65** | 43 | 0.48** | 52 | 0.71** |
| 6 | 0.47** | 16 | 0.43** | 26 | 0.48** | 35 | 0.61** | 44 | 0.58** | 53 | 0.70** |
| 7 | 0.64** | 17 | 0.70** | 27 | 0.53** | 36 | 0.68** | 45 | 0.71** | 54 | 0.67** |
| 8 | 0.66** | 18 | 0.74** | 28 | 0.49** | 37 | 0.65** | 46 | 0.67** | 55 | 0.74** |
| 9 | 0.71** | 19 | 0.72** | 29 | 0.45** | 38 | 0.54** | 47 | 0.59** | 56 | 0.66** |
| 10 | 0.56** | 20 | 0.47** | | | | | | | | |

| Model | Sum of Squares | DF | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 143608.322 | 4 | 35902.081 | 109.193 | .000[a] |
| Residual | 324520.113 | 987 | 328.794 | | |
| Total | 468128.435 | 991 | | | |

Note: a. Predictors: (Constant) (SQ), gender, specialization and age.
b. Dependent Variable: mental health.

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 30.760 | 4.437 | | 6.933** | .000 |
| **Spiritual intelligence** | .212 | .012 | .486 | 17.243** | .000 |
| **Age** | -.272- | .464 | -.017- | -.586- | .558 |
| specialization | .668 | .102 | .194 | 6.561** | .000 |
| **Gender** | 1.076 | 1.266 | .024 | .850 | .396 |
| **Gender** | **N** | **Mean** | **SD** | **T-test** | **DF** |
| **Male** | 349 | 111.58 | 15.38834 | 5.450** | 990 |
| **Female** | 643 | 119.35 | 24.07433 | | Sig. (2-tailed) |
| Age | | | | | 0.000 |
| **Type of variance** | **Sum of Squares** | **DF** | **Mean Square** | **F** | **Sig.** |
| **Between Groups** | 13635.713 | 1 | 13635.713 | 29.702** | .000 |
| **Within Groups** | 454492.722 | 990 | 459.084 | | |
| **Total** | 468128.435 | 991 | | | |
| **Specialization** | | | | | |
| **Type of variance** | **Sum of Squares** | **DF** | **Mean Square** | **F** | **Sig.** |
| **Between Groups** | 50433.848 | 16 | 3152.115 | 7.358 | .000 |
| **Within Groups** | 417694.588 | 975 | 428.405 | | |
| **Total** | 468128.435 | 991 | | | |
| **Relationship** | N | **Pearson Correlation- R** | **Type of correlation** | **R Square** | |
| **MH× SQ** | 992 | 0.516** | Positive | 0.266 | |

Note: a dependent variable: Mental Health.

**Table 3.** Cronbach's Alpha reliability the of SQ and MH scales

| Dimensions of SQ scale | Items | Cronbach's Alpha |
|---|---|---|
| Total | 83 | 0.947 |

| | | |
|---|---|---|
| Dimensions of MH scale | 56 | 0.949 |

**Table 4.** The regression model (ONE-WAY ANOVA) to test independent combined variables predictors (gender, specialization and age) and Regression Coefficients of determine the relationship; Pearson Correlation R shows the relationship between mental health and spiritual intelligence.

To examine the third hypothesis of the differences between students' scores of mental health in reference to the variables (gender, age, and specialization), the (T) test, and ONE-WAY ANOVA were used. They showed that there were statistically different at ($\alpha \leq 0, 01$) between the students' scores of mental health, which refers to the variable (gender) in favour of female Table 5. Also, the values of calculated (F) were statistically different at ($\alpha \leq 0, 01$) with age and specialization variables. This means that there were statistically significant differences at ($\alpha \leq 0, 01$) between students' scores of the mental health in reference to the variables age and specialization.

In order to determine the differences between students' scores of the mental health scale according to age and specialization, the values of averages and standard deviation (SD) were used. They showed that there were statistical differences at ($\alpha \leq 0, 01$) between the students' scores of the mental health, which refers to the age variable between (28-30) Table 6. However, there were statistically different at ($\alpha \leq 0, 01$) between the students' scores of the mental health scale in reference to the specialization variable of undergraduate students studying nutrition.

**Table 5.** The result of T-test showed the differences between students' scores of the mental health scale in reference to the gender variable. Also, the result of ONE-WAY

ANOVA showed the differences between the scores of the students, which refer to the variables age, and specialization.

| **Gender** | **N** | **Mean** | **SD** | **T-test** | **DF** |
|---|---|---|---|---|---|
| **Male** | 349 | 111.58 | 15.38834 | 5.450** | 990 |
| **Female** | 643 | 119.35 | 24.07433 | | Sig. (2-tailed 0.000 |
| Age | | | | | |
| **Type of variance** | Sum of Squares | DF | Mean Square | F | Sig. |
| **Between Groups** | 13635.713 | 1 | 13635.713 | 29.702** | .000 |
| **Within Groups** | 454492.722 | 990 | 459.084 | | |
| **Total** | 468128.435 | 991 | | | |
| **Specialization** | | | | | |
| **Type of variance** | **Sum of Squares** | **DF** | **Mean Square** | **F** | **Sig.** |
| **Between Groups** | 50433.848 | 16 | 3152.115 | 7.358 | .000 |
| **Within Groups** | 417694.588 | 975 | 428.405 | | |
| **Total** | 468128.435 | 991 | | | |

**Table 6.** The means and standard deviation according to the age Intervals and specialization.

| **Age Intervals** | **Frequency** | **Mean** | **SD** |
|---|---|---|---|
| 18-20 | 632 | 117.59 | 21.802 |
| 21-24 | 227 | 115.67 | 21.347 |
| 25-27 | 42 | 113.50 | 19.508 |
| 28-30 | 27 | 121.26 | 25.892 |
| 31-33 | 28 | 115.96 | 20.925 |
| 34-36 | 15 | 102.80 | 15.816 |
| 37-39 | 12 | 108.33 | 22.552 |
| 40-42 | 6 | 112.83 | 31.211 |
| 43-45 | 2 | 103.00 | 11.313 |

| | | | |
|---|---|---|---|
| 46-48 | 1 | 99.00 | …… |
| Total | 992 | 116.62 | 21.734 |
| Specialization | Frequency | Mean | SD |
| Education | 73 | 106.89 | 16.364 |
| Literature | 65 | 109.22 | 17.016 |
| Business | 92 | 106.72 | 17.208 |
| IT | 47 | 115.00 | 14.284 |
| Law | 41 | 111.29 | 14.815 |
| Language | 34 | 114.56 | 13.269 |
| Tourism | 3 | 105.33 | 5.131 |
| Nursing | 30 | 106.37 | 14.213 |
| Pharmacy | 21 | 110.67 | 9.350 |
| Medical | 20 | 112.65 | 12.097 |
| Science | 50 | 120.42 | 23.919 |
| Nutrition | 13 | 135.38 | 24.472 |
| Medical applied | 41 | 130.51 | 28.499 |
| Dentist | 11 | 127.27 | 27.000 |
| IT of Applied Studies and Social Service | 10 | 105.70 | 23.199 |
| Diploma of Applied studies and social service | 32 | 123.56 | 27.239 |
| Common First year | 409 | 120.96 | 22.991 |
| Total | 992 | 116.62 | 21.734 |

# 5 | Comments

College students are vulnerable to mental health problems. Half of mental health problems start by age 14 and three quarters by the age of 24 years (Roland et al,2005). The sample distribution of age was from 18 until 48 years old, and from age 28-30 was the highest age level of the mental health scale in this sample compared with other age

levels. Therefore, educators and communities play a role and have a responsibility to enhance college students' mental health. Spiritual health is fundamental to good mental health. In this study, mental health was a dependent variable, and spiritual intelligence was an independent variable. The finding of this study showed that spiritual intelligence was a predictor of mental health, and there is a significant and positive relationship between mental health and spiritual intelligence. This finding could be used for guidance to improve spiritual intelligence dimensions for college students' mental health by providing training or education awareness.

## 6 | Discussion

The results revealed that there is a positive and significant correlation between mental health and spiritual intelligence. Similar findings were given by Tabarsa & Jalaei (2015); Dash&Patnaik (2015); Bozorgi& Bozorgi (2016); Shateri et al., (2019). In other words, students who have higher spiritual intelligence have better mental health. Therefore, a person with high spiritual intelligence has the capacity to cope with stress, solve problems, and behave virtuously. Hence, these capacities help to strengthen the individual's mental health, so the results showed a positive and statistically significant relationship between mental health and the independent variables. Also, ONE-WAY ANOVA results highlighted that independent combined variables are significant predictors of the mental health variable. Similar results were also confirmed by Charkhabi et al. (2014) and Desai (2016). Conversely, there are statistically different at ($\alpha \leq 0,01$) with the spiritual intelligence and specialization variables, but there are not statistically significant differences at ($\alpha \leq 0,01$) with age and gender variables. As

combined variables, spiritual intelligence, age, specialization, and gender contribute in predicting mental health. Also, the results of the relationship between the mental health scale and independent variables were different. There were significant differences with spiritual intelligence and specialization, but there where not significant differences with age and gender. These results could refer to the differences of culture characteristics of the sample. However, ONE-WAY ANOVA results showed that there were significantly higher scores of the mental health scale in reference to the variable of gender (female) students. Similar results were also confirmed by Dash & Patnaik (2015).

## 7 | Conclusion and recommendations

In general, it is difficult to maintain an effective level of student mental health without the support of the larger community, even beyond the smaller community of academia, and there remains a broader need for educational awareness about problem solving techniques as well as the concepts of personal meaningfulness and hope. Subsequently, one of the challenges that the Arab world faces is the lack of preventive interventions for mental health problems, lifestyle improvement, and better local conditions (Patel, 2008). Future studies are needed to develop and maintain student mental health. For instance, researchers could examine other predictors for mental health. This study examined the differences between mental health and all the university specializations in general; so future studies could also examine the differences between two or more groups in specifically selected specializations. Finally, researchers could examine and compare according to various age levels.

## Conflict of interest disclosure

The author has no conflicts of interest to report. The author confirms that the

research presented in this article met the ethical guidelines, including adherence to the legal requirements, and received approval from the committee of Research Implementation Studies of King Saud University.

## Funding

No funding was used to support this research and or the preparation of the manuscript.

## Acknowledgment

The author would like to thank committee of research implementation studies, in the deanship of common first year, for approval and for facilitating the distribution of the electronic questionnaires. The author is also thankful to Justin Able for help proofreading the research.

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