

The Impact of Spiritual Intelligence, Gender and Educational Background on Mental Health Among College Students

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Abstract The present study is conducted on 300 PG-level college students in Haridwar, Uttarakhand (India). The aim of the present study is to examine the level of spiritual intelligence and mental health, to observe relationship between these two variables and also to identify the difference in spiritual intelligence and mental health across gender and educational background (arts and science). The purposive sampling technique is used to select 300 college students of both disciplines of arts and science from the four different government degree colleges/campuses in Haridwar. Integrated Spiritual Intelligence Scale and Mithila Mental Health Status Inventory are used to observe the level of these variables among college students. In the present study, correlational design is employed. All the statistical analyses are done with the help of computer software SPSS. To observe relationship Pearson correlation and to identify the difference *t* test are used. Findings of the study revealed that spiritual intelligence and mental health relate significantly among arts students, and male and female arts students separately have significant relationship between spiritual intelligence and mental health. Spiritual intelligence and mental health relate significantly among science students, and male and female science students separately have significant relationship between spiritual intelligence and mental health. No significant difference is found between male and female students in terms of spiritual intelligence. No significant difference is found between arts and science students in terms of spiritual intelligence. No significant difference is found between male and female students in terms of mental health. No significant difference is found between arts and science students in terms of mental health.

Keywords Spiritual intelligence · Mental health · Gender · Educational background

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Introduction

Spiritual Intelligence (“SQ”)

If say simply, intelligence is the ability to solve the problems. In the beginning, the concept of intelligence was fully based on logical and mathematical abilities. Initially, it was expected that IQ would be a strong predictor of success in careers. In fact it has turned out to be a weak predictor of success. IQ appears to be related to minimum standards to enter a given a profession. Once you have chosen your career, what actually leads to success is far more complicated. This phenomenon leads psychologist’s attention to the other intelligence needed in life which is “emotional intelligence” (EQ), a concept developed by Daniel Goleman in his book by the same title in the mid-1990. Not with standing this, research does not stop, because a computer may have higher IQ level than human and animals can have EQ too (ability to understand the emotions of others and oneself). There in the whole world is a separate thing which makes human being different from the all organisms; that is the spiritual intelligence (SQ), ability to solve the problem of meaning and values in life (Zohar and Marshall 2000). SQ makes us ask the big questions: Why was I born? What is the meaning of my life? Why am I devoting my life to this relationship or this job or this cause? What am I really trying to achieve with this project or with my life? It allows us to see the larger context in which events take place and to see the big picture. It gives our lives an overarching canopy of meaning and value (Zohar and Marshall 2004). Spiritual intelligence is simply the expression of innate spiritual qualities through our thoughts, actions and attitude. In psychology, spiritual intelligence (“SQ”) is a term indicating the state of ultimate intelligence coming after IQ (intelligence quotient) and EQ (emotional quotient). According to Danah Zohar, SQ is what we use to develop our longing and capacity for meaning, vision and value. Spiritual intelligence facilitates a dialogue between reason and emotion, and between mind and body. It allows us to integrate the intrapersonal and the interpersonal, and to transcend the gap between self and other. Vaughan (2002) offered the description that: “Spiritual intelligence is concerned with the inner life of mind and spirit and its relationship to being in the world.”

Operational Definition of Spiritual Intelligence

In the present study, spiritual intelligence has been taken as a construct, developed by Amram and Dryer (2008); according to them “spiritual intelligence is the ability to apply, manifest, and embody spiritual resources, values, and qualities to enhance daily functioning and wellbeing.”

Mental Health

If we study the concept of normality deeply, we find different meanings of it, as Offer and Sabshin (1966) had surveyed in Psychology, Psychiatry, Sociology and Anthropology. *Normality as health*: in this meaning, common to both traditional medical–psychiatric and lay usage, normality simply means “not sick.” *Normality as ideal (utopia)*: it seeks a definition of normality in terms of a desirable or ideal state. Views of positive mental health (e.g., Jahoda 1958) or those which emphasize the goal of psychological development as self-actualization (Maslow 1954; Goldstein 1939), becoming a “fully functioning person” (Rogers) or attaining the “mature personality” (Allport 1961) are of this class.

Normality as average: a third perspective derives from the statistics of measurement on NPC. *Normality as socially acceptable*: it believes that behavior can only be judged in terms of the social context within which it occurs. If it conforms the normative expectations of society, it is normal; if it does not, it is deviant or abnormal (of ill mental health). *Normality as process*: it attempts to characterize normality in terms of processes over time rather than in cross-sectional perspective. The World Health Organization defines mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (Wikipedia). According to The American Heritage® Dictionary of the English language (2009), mental health is “A state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life.” So far the term mental illness is concerned then; mental illness is broadly defined as a disorder that affects a person’s cognitive, social, emotional and/or behavioral state or abilities (American Psychiatric Association 2000).

Operational Definition of Mental Health

In this study, mental health has taken as a construct developed by Kumar and Thakur (1986). They studied it in five dimensions: (1) *Egocentrism*: in this, the individual is concerned about his own needs, feelings, opinions and ideas. People scoring high on this dimension would have difficulty in identifying or sympathizing with other people. (2) *Alienation*: this dimension was developed to indicate the similarity of the respondent to hospitalized psychiatric cases. Persons scoring high on this dimension would be suspicious, oversensitive, getting unusual sensations and sensory distortions. (3) *Expression*: this would indicate the level of interaction of individuals on a social level. High score on this dimension would indicate inconsistency of relationships in social situations, lack of social disclosure and feeling of insecurity. (4) *Emotional Unstability*: this dimension will indicate whether the person would be unhappy, nervous, emotionally labile, fearful, anxious and depressed. High score on this dimension would indicate that the individual has serious personality problems and would need psychological and psychiatric assistance. (5) *Social non-conformity*: this would provide a clue to whether the individual was aligning with the existing social system or against it. A high score on this dimension will indicate people to be narcissistic.

Review of Literature

Spiritual Intelligence and Mental Health

Bergin (1983) made a meta-analysis on religiosity and mental health and suggested that religion reflects a multidimensional phenomenon that has positive and negative aspects. Adams et al. (2000) studied conceptualization and measurement of the spiritual and psychological dimensions of wellness in a college population. Results revealed that the effect of life purpose on perceived wellness was mediated by optimism and sense of coherence, which had independent effects on perceived wellness beyond that of life purpose. Meisenhelder and Chandler (2002) had done a mail survey to examine the relationship of attitudinal and behavioral measures of spirituality to physical and mental health outcomes

in a sample of elderly community residents. Multiple regression analyses indicated that importance of one's faith had the strongest association with positive mental health, even after controlling for the effect of other significant variables, age and education. The behavioral measure of prayer was a component of importance of faith to mental health, with no independent impact. This study highlights attitudes rather than practices, as the stronger spiritual variables related to mental health in the elderly. In other study conducted on college students of USA, Nagel and Sgoutas-emch (2007) found that individuals with higher spirituality scores are more active and hold diener health beliefs than those with low spirituality scores. However, some contradictions from previous research were reported in this sample. Allen et al. (2008) studied religiousness/spirituality and mental health among older male inmates. They found that having a greater number of daily spiritual experiences and not feeling abandoned by God were associated with better emotional health. Faribors et al. (2010) studied the relationship between nurses' spiritual intelligence and happiness in Iran. Results show that there is a significant relationship between the spiritual intelligence and happiness. On the other hand, the demographic characteristics the section had significant relationship with spiritual intelligence and happiness. Koenig (2010) studied spirituality and mental health. He found that spirituality may serve as a psychological and social resource for coping with stress. Abadi et al. (2012) studied the effect of Islamic fasting in Quran on spiritual intelligence and happiness of fasting persons. Results revealed that spiritual intelligence was higher in fasting group compared to non-fasting without any excuse or non-fasting with an excuse; also spiritual intelligence was higher in non-fasting with an excuse than in non-fasting without any excuse. Isfahani and Nobakht (2013) examined the impact of spiritual intelligence on the staff happiness (case study: Golpayegan Petrochemical Company) and found that spiritual intelligence variable has significant positive correlation with staff happiness with coefficient of 501/0 (significant p value < 0.05). Shojaei and Ghaffari (2013) studied the relationship between workers religious beliefs and spiritual intelligence and general health. Results showed that there is a significant relationship between spiritual intelligence and its components (transcendental consciousness, spiritual experiences, forgiveness) and religious activities, decisions-making and life choices regarding religion. Alihosseini et al. (2014) studied the relationship between spiritual intelligence and its components with happiness in youths. The Pearson correlation results show that there is a positive and meaningful relationship between spiritual intelligence and its components (namely inner peace, spiritual experiences, forgiveness and self-recognition) with happiness. Moreover, the results of the independent t test show that there is a meaningful difference between female and male students in terms of the spiritual intelligence-happiness relationship with both variables larger in female students. Singh et al. (2010) studied spiritual intelligence, altruism, school environment and academic achievement as predictor of mental health of adolescents. Result through multiple correlation and regression analysis revealed that type of school, spiritual intelligence, altruism, rejection (dimension of school environment) and control (dimension of school environment) were the significant predictors of mental health, and gender, location of residence, creative stimulation, cognitive encouragement, acceptance, permissiveness and academic achievement were not significant predictors of mental health. Rajhans (2012) attempted in a study on 120 adults to find out relationship between certain spiritual practices and mental health of young and middle-aged adults and to know sex differences, age differences and educational level differences in mental health and spiritual practices. The results indicated a significant relationship between mental distress and spiritual practices. It is also indicated that there is a significant difference between mean scores on spiritual practices by young and middle-aged individuals and sex and

educational level differences on mental health and spiritual practices are insignificant. Gupta (2012) studied spiritual intelligence and emotional intelligence in relation to self-efficacy and self-regulation among college students and found that independent variables (spiritual intelligence and emotional intelligence) are positively correlated with the dependent variables (self-efficacy and self-regulation). And further, the results showed that a significant difference exist among male and female students in terms of emotional intelligence, self-efficacy and self-regulation. Researcher found that a significant difference does not exist among male and female students in terms of certain dimensions of spiritual intelligence, but in total score of spiritual intelligence a significant difference exists. Male were found to be better in terms of spiritual intelligence and emotional intelligence than female students. Mishra and Vashist (2014) made a review study of spiritual intelligence, stress and well-being of adolescents in twenty-first century and concluded that spiritual intelligence has a significant influence on the quality of life and success for adolescents in twenty-first century.

Gender/Educational Background and Spiritual Intelligence

Deaux and Taynor (1973) made an evaluation of male and female ability: bias works two ways, and found that highly competent males were rated more positively than highly competent females and males of low competence lower than similar females. Lynn (1994) studied on sex differences in intelligence and brain size: A paradox resolved, and found that males have larger brains than females, even when corrected for body size, and brain size is positively correlated with intelligence. Loewenthal et al. (2002) made an analysis on are women more religious than men? Gender differences were examined among volunteers who were self-defined as Christian ($n = 230$), Hindu ($n = 56$), Jewish ($n = 157$) and Muslim ($n = 87$). Women ($n = 302$) described themselves as significantly less religiously active than did men ($n = 226$), but this effect was confined to the non-Christian groups. It is suggested that the general conclusion that women are more religious than men is culture-specific, and contingent on the measurement method used. Naghavi and Redzuan (2011) studied the relationship between gender and emotional intelligence. The research showed that emotional intelligence has meaningful association with gender differences. Finally, as a conclusion they summarized that girls are higher than boys in emotional intelligence, but high emotional intelligence in boys is a better predictor for achievement. Katyal and Awasthi (2005) studied gender differences in emotional intelligence among adolescents of Chandigarh. The findings revealed that majority of boys, girls and the total sample had good followed by low emotional intelligence. Girls were found to have higher emotional intelligence than boys. However, the difference touched only 0.10 level; hence, findings are just suggestive of the trend. Kaur et al. (2012) studied emotional intelligence: significance of psychology and spirituality. It was concluded that individuals studying psychology were more emotionally intelligent as compared to the other two groups. Varied levels of SQ had a significant effect on emotional intelligence, but gender difference was insignificant. It would be necessary to repeat the study of Gupta (2012) to know the gender differences in spiritual intelligence and emotional intelligence in relation to self-efficacy and self-regulation among college students. Results indicated that a significant difference exists among male and female students in terms of emotional intelligence, self-efficacy and self-regulation. Researcher found that significant difference does not exist among male and female students in terms of certain dimensions of spiritual intelligence, but in total score of spiritual intelligence, a significant difference exists. Male were found to be better in terms of spiritual intelligence and emotional intelligence than female students. Siddiqui (2013)

studied the effect of achievement motivation and gender on spiritual intelligence. Results showed a significant effect of achievement motivation on spiritual intelligence at .05 level. Further, findings revealed that effect of gender was not found on spiritual intelligence. Khan and Singh (2013) did a study on gender differences on gratitude, spirituality and forgiveness among school teachers. Results indicated that significant gender differences were found among male and female teachers with respect to gratitude (males were found to be higher than females), spirituality and forgiveness (females were found to be higher than males on both the dimensions). Saxena and Jain (2013) studied social intelligence of undergraduate students in relation to their gender and subject stream. The findings of gender analysis indicate that female students possess more social intelligence than male students, and analysis of stream indicates that arts students are having greater social intelligence than students of other streams. Rathee and Kumari (2014) studied social intelligence of perspective teachers in relation to their gender and subject stream. The findings of gender and subject stream analysis indicated that female and male, and science and arts perspective teachers possess similar social intelligence. The mean value of the perspective teachers belonging to arts stream is higher on social intelligence than the perspective teachers belonging to science stream, but it is not significant.

Gender/Educational Background and Mental Health

Zuckerman (1989) studied stress, self-esteem and mental health: how does gender make a difference? The men and women reported similar stress levels in most areas of life, but the women reported greater stress regarding family relationships and concern about their mental health. Kushner and Sher (1993) studied comorbidity of alcohol and anxiety disorders among college students: effects of gender and family history of alcoholism. Male participants, as well as those with a parental history of alcoholism, had a significantly greater base rate of alcohol disorder than did other participants. Roothman et al. (2003) studied the gender differences in aspects of psychological well-being. Statistically significant gender difference with small to medium practical effects was found. Men scored higher on physical self-concept, automatic thoughts (positive), constructive thinking, cognitive flexibility, total self-concept and fortitude. Women scored higher on the expression of affect, somatic symptoms and religious well-being. No significant gender differences were found on sense of coherence, satisfaction with life, affect balance, emotional intelligence, self-efficacy, and the social components of self-concept and of fortitude. Jafari et al. (2010) conducted a study on spiritual well-being and mental health in university students. The results of the study showed that there is a significant relationship between spiritual well-being and mental health. Nevertheless, there was no significant relationship between spiritual well-being and somatic symptoms, anxiety, social dysfunction and depression. The results of the regression analysis showed that religious and existential well-being significantly anticipated mental health. As well, another finding was that spiritual and existential well-being in females was significantly higher than in males. There was no sex-related difference in mental health scores. Patel and Andrew (2001) studied gender, sexual abuse and risk behaviors in adolescents: a cross-sectional survey in schools in Goa. Gender differences in the types of abuse and the associations with abuse were found. However, there was no difference between boys and girls in the rates of experience of coercive sexual intercourse. Differences in risks were found for urban and rural school students; while rural boys were more likely to have experienced coercive sexual intercourse than urban boys (10.3 vs. 2.5%), urban girls were more likely to have experienced any form of sexual abuse than rural girls (37.2 vs. 25.4%). Kirmani and

Suman (2010) studied gender differences in alcohol-related attitudes and expectancies among college students. Results revealed that boys had higher psychological distress along with a more favorable attitude toward alcohol than girls. Further, boys expected that alcohol use could lead to positive outcomes, while girls expected that alcohol use could lead to negative outcomes. Gupta and Kumar (2010) studied mental health in relation to emotional intelligence and self-efficacy among college students. The results indicate that emotional intelligence and self-efficacy are positively correlated with mental health. It also revealed that male students were better than female students in terms of mental health, emotional intelligence and self-efficacy. Bhatia and Dey (2011) studied gender differences in depressive symptoms: the role of daily hassles, coping styles, social support and personal mastery. Findings revealed a significant difference in the extent of depressive symptoms between genders with females scoring higher scores. Female participant also showed a significantly higher use of wishful thinking strategy indicating emotion-focused coping styles. No significant gender difference emerged on the dimensions of perceived social support. Quadri and Akolkar (2011) made a study of mental health among college going students. A significant difference was found between male and female college going students. The result is that male college going students (mean value—20.00) exhibit significantly better mental health as compared to their female counter-partners (mean value = 21.78). There was no significant difference between rural and urban college going students. Shirazi et al. (2012) studied mental health in relation to personality characteristics among professional and non-professional students. The result shows that there is a significant correlation between mental health and personality characteristics. The multiple regression analysis using the stepwise method found agreeableness, neuroticism and openness as significant predictors of mental health. Finally, independent *t* test found no significant difference at the mean scores of professional and non-professional students' mental health and personality characteristics in terms of gender. Kumar and Bhukar (2013) studied stress level and coping strategies of college students. Two-way analysis of variance (ANOVA) showed that stress due to all the stimuli was significantly higher among girls in comparison with boys of their profession. Coping strategy was higher in boys than in girls of their respective profession, but physical education girls had higher coping strategy than boys and girls of engineering. Finally, it is concluded that physical education students had better coping strategy than engineering students. Joshi and Garg (2013) studied mental health in reference to length of service among males and females academicians. The mean and F ratio results of the present study revealed a significant difference in mental health between both the genders. The study had also revealed that length of service for more than 10 years and length of service for less than 5 years differ significantly from each other. Nisa (2013) studied personality factors and family problems as a determinant of mental health among college students. Results of multiple regression analysis (stepwise) revealed that among all personality factors, extraversion was found to be a significant predictor for positive self-evaluation; openness emerged as a significant predictor for perception of reality and agreeableness for integration of personality. Furthermore, findings of *t* test revealed that both male and female students differ significantly on extraversion, openness and agreeableness factors of personality. They also significantly differ on total mental health including integration of personality and environmental competence dimensions of mental health. Female college students scored higher on total mental health, especially on environmental competence, one of the dimensions of mental health, than their counterpart. But only on family problems, no gender difference was found. Ashwini and Barre (2014) studied stress and adjustment among college students in relation to their academic performance. Findings revealed that there is a significant difference in the level of stress

experience among students. There is a significant difference between arts and science students' adjustment areas. There is a significant difference between boys and girls on academic performance. There is a significant difference between arts and science students on academic performance. However, there were no significant gender differences among the arts and science, boys and girls. Sharma (2014) studied effect of gender and stream on depression among adolescents. The results demonstrated that gender and stream had significant interaction effect on depression among adolescents. Both were dependent on each other to affect the depression score of students. Also, gender and stream differences emerged on depression. Girls showed higher score on depression as compared to boys, and arts students were more depressed as compared to science and commerce students. Further, it was observed that science, arts and commerce stream boys did not show significant difference on depression, but girls in science, arts and commerce streams showed significant difference on depression, and it was favored by arts girls. In case of science and commerce streams, no significant gender differences occurred. But in arts stream, significant gender differences were observed on depression with preponderance of girls over boys. Results of the study indicated a clear effect of gender and stream on depression among adolescents.

In this way, we observe the lack of a well-developed construct of spiritual intelligence and mixture of the both concepts of religiosity and spirituality in past studies while studying the mental health. And further, we see the heavy lack of a well-developed construct of spiritual intelligence and mixture of the both concepts of religiosity and spirituality in past studies while studying the gender and educational background. Past researches explore intelligence, social intelligence and emotional intelligence but do not give the clear picture about the role of gender and educational background while studying spiritual intelligence. And finally, we observe various studies on mental health while studying the gender. But still clear picture is not available, because studies favor both male and female students in different dimensions of mental health. And there also found the lack of clear picture while studying effect of educational background on mental health.

Objectives and Hypotheses of the Study

The present study is conceptualized to achieve these objectives, and on the basis of the past researches and these objectives, the following hypotheses are formulated:

Objectives:

1. To identify relationship between spiritual intelligence and mental health.
2. To examine the difference in spiritual intelligence across gender and educational background (arts and science).
3. To know the difference in mental health across gender and educational background (arts and science).

Hypotheses:

1. There would be a significant relationship between spiritual intelligence and mental health of arts students.

2. There would be a significant relationship between spiritual intelligence and mental health of science students.
3. There would be a significant difference between male and female students in terms of spiritual intelligence.
4. There would be a significant difference between arts and science students in terms of spiritual intelligence.
5. There would be a significant difference between male and female students in terms of mental health.
6. There would be a significant difference between arts and science students in terms of mental health.

Methodology

Sample

The present study is based on correlational design. In the present study, purposive sampling technique is used. And subjects designated for the study are 300 PG college students of both disciplines (150 arts and 150 science) and genders (75 males and 75 females). All the data are collected from the four different government degree colleges/campuses of Haridwar District of Uttarakhand (India). All the students selected as a sample have age of 20–30 years.

Tools

The tools used in the present study are:

1. *Personal biodata sheet* This is the front page of the whole questionnaire booklet, in which personal information of the participant has been filled by the individual only. It includes instructions, name, gender, age and educational details.
2. *The Integrated Spiritual Intelligence Scale (ISIS)* This 83-item self-report instrument developed by Amram and Dryer (2008) provides a single, overall measure of spiritual intelligence (SI), as well as scores for 5 broad domains and 22 specific capabilities. The ISIS demonstrates acceptable test–retest reliability; Pearson $r = 0.77$, $p < 0.01$. Convergent and discriminant validity of this scale is very good in relation with various other related scales and groups. High score in this scale indicates high spiritual intelligence.
3. *Mithila Mental Health Status Inventory (MMHSI)* This scale contains 50 items with 5 sub-scales, worded in both positive and negative manner. MMHSI is a Hindi-adapted version by Kumar and Thakur (1986). Split half and test retest reliability of the inventory are, respectively, .90 and .87. To find out concurrent validity, test is constructed on both psychiatric patients and normal students; the significant difference is found on all five sub-scales, and a good correlation is found with E.P.Q. High score in this scale indicates poor mental health.

Statistical Analysis

The obtained data on the various scales are analyzed in view of the objectives and hypotheses of the study. For analyzing correlation, Pearson correlation method is employed. And for analyzing significance of difference, *t* test is used. All the statistical analyses are performed with the additional help of computer software Microsoft Excel and SPSS.

Results and Discussion

This study is designed to observe the impact of spiritual intelligence, gender and educational background on mental health among college students. Keeping the objectives and hypotheses of the present study in view, results have been organized according to them. Firstly, we explore the mean values and standard deviation of the two variables SI (spiritual intelligence) and MH (mental health) and then narrate the results according to the hypotheses (Table 1).

As we have mentioned earlier, high score on spiritual intelligence scale (ISIS) indicates the high spiritual intelligence and high score on mental health inventory (MMHSI) means poor mental health. As Table 1 shows, the mean values and SDs of 300 college students are, respectively, 326.01 and 34.89 on ISIS scale and 129.64 and 13.39 on MMHSI scale. This indicates good variance on NPC.

Hypothesis 1 There would be a significant relationship between spiritual intelligence and mental health of arts students.

In the hypothesis 1, it was presumed that there would be a significant relationship between spiritual intelligence and mental health of arts students. Results of the study accepted this hypothesis and suggest that spiritual intelligence and mental health relate significantly among arts students. There is a highly significant negative correlation ($- .560$) between SI and MH of art students. It means as the degree of spiritual intelligence increases, the level of poor mental health decreases. Table 2 shows the score of 150 art students (75 males and 75 females) on the both scales of SI and MH, where the mean and SD of 150 art students on SI are, respectively, 328.92 and 35.18 and mean and SD on MH are 128.88 and 13.09. Further separately, Table 2 shows the highly significant correlation ($- .606$) between SI and MH of 75 male arts students and highly significant correlation ($- .527$) between SI and MH of 75 female arts students. There are many researches supporting this result mentioned earlier. In one of such study, Rajhans (2012) found the significant relationship between mental distress and spiritual practices. Edmondson et al. (2005) conducted a study on fifty-two female participants of different culture and status. They got results that the existential well-being predicts fewer physical health symptoms

Table 1 Showing the mean values and standard deviation for the SI and MH

Conditions	<i>N</i>	Minimum	Maximum	Mean	Standard deviation (SD)
SI	300	213.00	435.00	326.01	34.89
MH	300	99.00	160.00	129.64	13.39

Table 2 Showing the correlation between spiritual intelligence and mental health of arts students

	N	SI		MH		Correlation coefficient (<i>r</i>)
		Mean	SD	Mean	SD	
Total	150	328.92	35.18	128.88	13.09	− .560**
Male	75	327.12	43.66	127.71	13.91	− .606**
Female	75	330.72	24.07	130.05	12.04	− .527**

** *p* value < 0.01 (2-tailed)

and is associated with lower mean heart rate and decreased heart rate reactivity. In other study conducted on college students of USA, Nagel and Sgoutas-emch (2007) examined that whether the same pattern of relations reported earlier is seen in a sample of healthy college students. The results show that individuals with higher spirituality scores are more active and hold dierece health beliefs than those who scored in the low spirituality group. Alihosseini et al. (2014) studied the relationship between spiritual intelligence and its components with happiness in youths. Pearson correlation results show that there is a positive and meaningful relationship between spiritual intelligence and its components (namely inner peace, spiritual experiences, forgiveness, and self-recognition) with happiness (Fig. 1).

Hypothesis 2 There would be a significant relationship between spiritual intelligence and mental health of science students.

In the hypothesis 2, it was presumed that there would be a significant relationship between spiritual intelligence and mental health of science students. Results of the study also accepted this hypothesis and suggest that spiritual intelligence and mental health relate significantly among science students. There is a highly significant negative correlation (− .543) between SI and MH of science students. It means as the degree of spiritual intelligence increases, the level of poor mental health decreases among science students

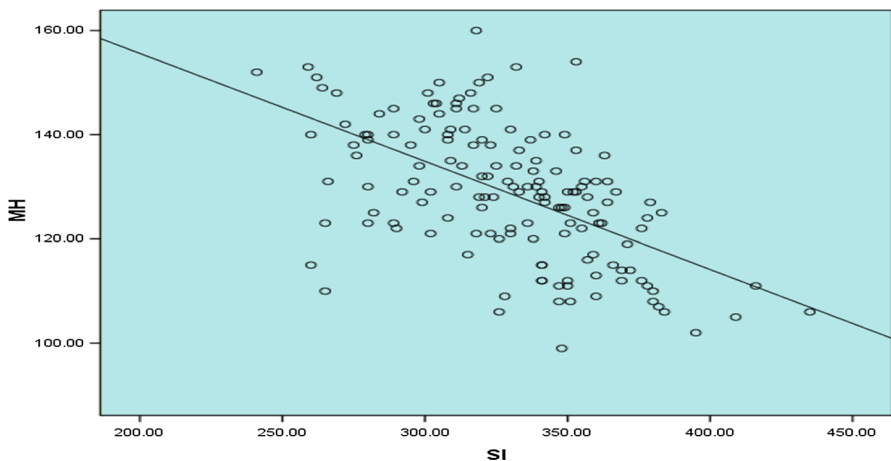


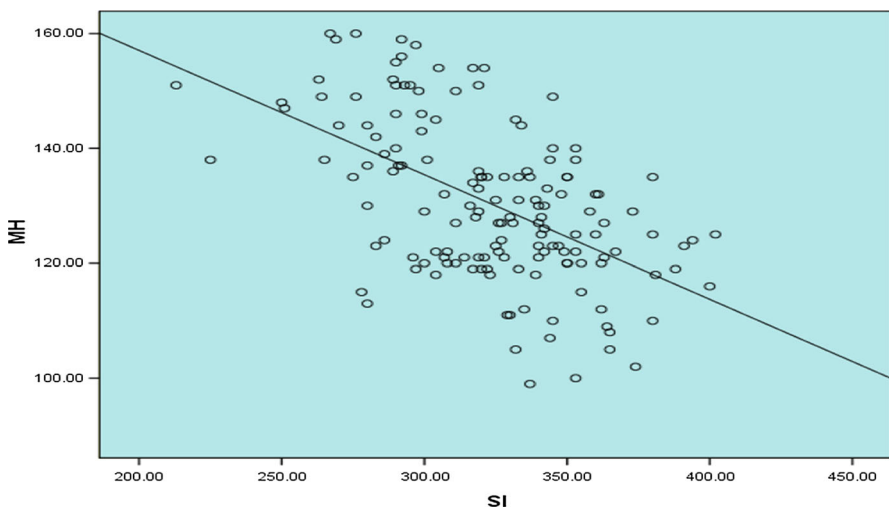
Fig. 1 Showing the correlation between spiritual intelligence and mental health of arts students

Table 3 Showing the correlation between spiritual intelligence and mental health of science students

	<i>N</i>	SI		MH		Correlation coefficient (<i>r</i>)
		Mean	SD	Mean	SD	
Total	150	323.11	34.47	130.39	13.76	−.543**
Male	75	320.79	36.96	131.03	14.37	−.540**
Female	75	325.43	31.87	129.76	13.20	−.544**

** *p* value < 0.01 (2-tailed)

too. Table 3 shows the score of 150 science students (75 males and 75 females) on the both scales of SI and MH, where the mean and SD of 150 science students on SI are, respectively, 323.11 and 34.47 and mean and SD on MH are 130.39 and 13.76. If we look on male and female science students separately, Table 3 shows the highly significant correlation (−.540) between SI and MH of 75 male science students and highly significant correlation (−.544) between SI and MH of 75 female science students. There are many other researches supporting these results. Singh et al. (2010) studied spiritual intelligence, altruism, school environment and academic achievement as predictor of mental health of adolescents. Result through multiple correlation and regression analysis revealed that type of school, spiritual intelligence, altruism, rejection (dimension of school environment) and control (dimension of School Environment) were the significant predictors of mental health. Gupta (2012) studied spiritual intelligence and emotional intelligence in relation to self-efficacy and self-regulation among college students. Results indicated that independent variables (spiritual intelligence and emotional intelligence) are positively correlated with the dependent variables (self-efficacy and self-regulation). Rippentrop et al. (2005) examined the relationship between religion/spirituality and physical health, mental health and pain in a chronic pain population. Hierarchical multiple regression analyses revealed

**Fig. 2** Showing the correlation between spiritual intelligence and mental health of science students

significant associations between components of religion/spirituality and physical and mental health. In one of such study conducted on two-hundred twenty-one undergraduate students enrolled in Personal Health and Wellness classes at The University of Tennessee, Nelms et al. (2007) examined the relationship between spirituality and health risks. Significant relationships between self-reported levels of spirituality and the health of college students were indicated during the study. In this way, this study concludes that college students integrating a spiritual component while processing decisions about risks that could negatively affect their health experienced better health outcomes (Fig. 2).

Hypothesis 3 There would be a significant difference between male and female students in terms of spiritual intelligence.

Table 4 shows the comparison between male and female students in terms of spiritual intelligence, in which the mean and SD values of 150 male and 150 female students are 323.95 and 40.44, and 328.07 and 28.27, respectively. The mean difference of 4.12 is not significant at any level. So the hypothesis 3 there would be a significant difference between male and female students in terms of spiritual intelligence is rejected. There are other studies related to these variables. Jafari et al. (2010) conducted a study on spiritual well-being and mental health in university students. The results of the study showed that there is a significant relationship between spiritual well-being and mental health. Nevertheless, there was no significant relationship between spiritual well-being and somatic symptoms, anxiety, social dysfunction and depression. As well, another finding was that spiritual and existential well-being in females was significantly higher than in males. There was no sex-related difference in mental health scores. Gupta (2012) studied spiritual intelligence and emotional intelligence in relation to self-efficacy and self-regulation among college students. The results found that a significant difference exist among male and female students in terms of emotional intelligence, self-efficacy and self-regulation. Researchers found that significant difference does not exist among male and female students in terms of certain dimensions of spiritual intelligence, but in total score of spiritual intelligence, a significant difference exists. Male were found to be better in terms of spiritual intelligence and emotional intelligence than female students. Kaur (2013) studied spiritual intelligence of secondary school teachers in relation to their job satisfaction. A significant difference is found between spiritual intelligence of government and private secondary school teachers. The study also indicated that spiritual intelligence and job satisfaction are not influenced by gender. Petrides and Furnham (2000) studied gender differences in measured and self-estimated trait emotional intelligence. Females scored higher than males on the “social skills” factor of measured trait EI. However, when the 15 facets of self-estimated EI were combined into a single reliable scale and the participants’ measured trait EI scores were held constant, it was demonstrated that males believed they had higher EI than females.

Table 4 Showing the comparison between male and female students in terms of spiritual intelligence

Gender	N	SI		Mean difference	t value
		Mean	SD		
Male	150	323.95	40.44	4.12	1.023 ^a
Female	150	328.07	28.27		

^aNot significant

Loewenthal et al. (2002) made an analysis on are women more religious than men? Gender differences were examined among volunteers who were self-defined as Christian ($n = 230$), Hindu ($n = 56$), Jewish ($n = 157$) and Muslim ($n = 87$). Women ($n = 302$) described themselves as significantly less religiously active than did men ($n = 226$), but this effect was confined to the non-Christian groups. It is suggested that the general conclusion that women are more religious than men is culture-specific. Siddiqui (2013) studied effect of achievement motivation and gender on spiritual intelligence. Results showed effect of gender was not found on spiritual intelligence. Alihosseini et al. (2014) studied the relationship between spiritual intelligence and its components with happiness in youths. The results of the independent t test show that there is a meaningful difference between female and male students in terms of the spiritual intelligence–happiness relationship with both variables larger in female students. Khan and Singh (2013) did a study on gender differences on gratitude, spirituality and forgiveness among school teachers. Results indicated that significant gender differences were found among male and female teachers with respect to gratitude (males found to be higher than females), spirituality and forgiveness (females were found to be higher than males on both the dimensions). However, further research is needed to substantiate the same (Fig. 3).

Hypothesis 4 There would be a significant difference between arts and science students in terms of spiritual intelligence.

Table 5 shows the comparison between arts and science students in terms of spiritual intelligence, in which the mean and SD values of 150 art and 150 science students are 328.92 and 35.18, and 323.11 and 34.47, respectively. The mean difference of 5.81 is not significant at any level. So the hypothesis 4 there would be a significant difference between arts and science students in terms of spiritual intelligence is rejected. But in the study, we find some other trends on the same data—the mean and SD values of 75 female art and 75 male science students are 330.72 and 24.07, and 320.79 and 36.96, respectively, so the mean difference of 9.93 (t value = 1.950) is found to be significant at 0.10 level (p value = .053). So on the basis of these results, this may be stated that there is a difference between female art and male science students in terms of spiritual intelligence. Mean score of female art students is higher than the mean score of male science students on

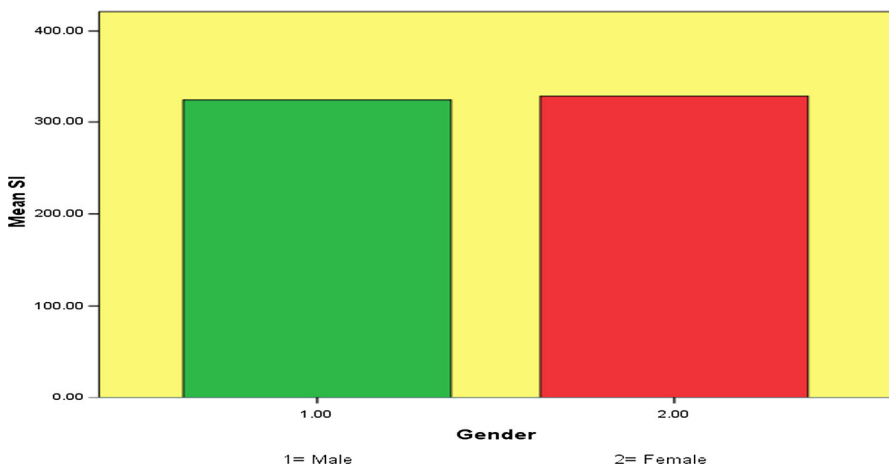


Fig. 3 Showing the comparison between male and female students in terms of spiritual intelligence

Table 5 Showing the comparison between arts and science students in terms of spiritual intelligence

Educational background	N	SI		Mean difference	t value
		Mean	SD		
Arts	150	328.92	35.18	5.81	1.445 ^a
Science	150	323.11	34.47		

^aNot significant

spiritual intelligence. After observing these new trends, it may be stated that these trends lead a way for the new study. We have another studies related to these variables; Chaturvedi (2010) studied gender differences in emotional intelligence. Results of the study indicated a significantly higher score of female students on self-awareness, self-motivation, managing relations, integrity and overall emotional intelligence compared to the male students. The difference in other dimensions of emotional intelligence was statistically insignificant. Kaur et al. (2012) studied emotional intelligence: significance of psychology and spirituality. It was concluded that individuals studying psychology were more emotionally intelligent as compared to the other two groups. Varied levels of SQ had a significant effect on emotional intelligence, but gender difference was insignificant. Aggarwal and Saxena (2012) did a comparative study of emotional intelligence of undergraduate students. Results indicated that the collected data were analyzed for testing the significance of difference between the overall emotional intelligence scores of the undergraduate students of science, commerce and arts streams. The mean score of arts students was lesser than that of the commerce students. However, this difference in means is not statistically significant. They further found significant difference between the emotional intelligence of commerce and science students. The mean score of science students is more than that of commerce students. The mean value of science students was significantly greater than that of arts students. Saxena and Jain (2013) studied social

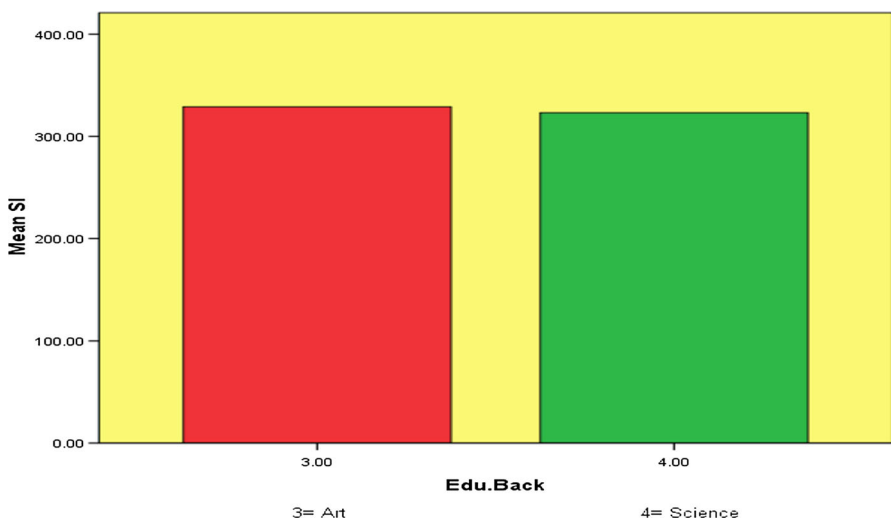


Fig. 4 Showing the comparison between arts and science students in terms of spiritual intelligence

Table 6 Showing the comparison between male and female students in terms of mental health

Gender	N	MH		Mean difference	t value
		Mean	SD		
Male	150	129.37	14.19	0.54	0.349 ^a
Female	150	129.91	12.59		

^aNot significant

intelligence of undergraduate students in relation to their gender and subject stream. The findings of gender analysis indicate that female students possess more social intelligence than male students, and analysis of stream indicates that arts students are having greater social intelligence than students of other streams (Fig. 4).

Hypothesis 5 There would be a significant difference between male and female students in terms of mental health.

Table 6 shows the significance of the difference between male and female students in terms of mental health, in which the mean and SD values of 150 male and 150 female students are 129.37 and 14.19, and 129.91 and 12.59, respectively. The mean difference of 0.54 is not significant at any level. So the hypothesis 5 there would be a significant difference between male and female students in terms of mental health is rejected. Therefore, we can state that there is no significant difference between male and female students in terms of mental health. We have other studies like these trends; Zuckerman (1989) studied stress, self-esteem and mental health: how does gender make a difference? The men and women reported similar stress levels in most areas of life, but the women reported greater stress regarding family relationships and concern about their mental health. Cotton et al. (2006) studied influence of gender on mental health literacy in young Australians. Female respondents (60.7%) were significantly more likely to correctly identify depression in the vignette as compared to male respondents (34.5%). No significant gender differences were noted for the psychosis vignette. Jafari et al. (2010) conducted a study on spiritual well-being and mental health in university students. The results of the study showed that there is a significant relationship between spiritual well-being and mental health. Nevertheless, there was no significant relationship between spiritual well-

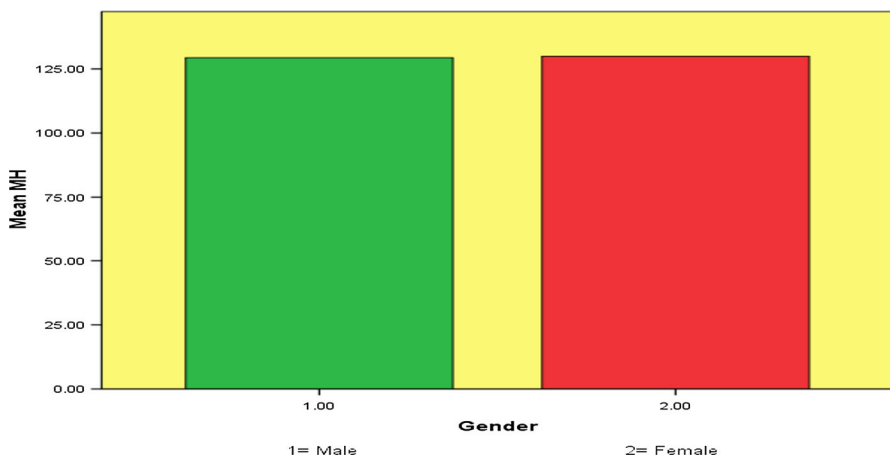
**Fig. 5** Showing the comparison between male and female students in terms of mental health

Table 7 Showing the comparison between arts and science students in terms of mental health

Educational background	N	MH		Mean difference	t value
		Mean	SD		
Arts	150	128.88	13.19	1.51	0.978 ^a
Science	150	130.39	13.76		

^aNot significant

being and somatic symptoms, anxiety, social dysfunction and depression. As well, another finding was that spiritual and existential well-being in females was significantly higher than in males. There was no sex-related difference in mental health scores (Fig. 5).

Hypothesis 6 There would be a significant difference between arts and science students in terms of mental health.

Table 7 shows the significance of the difference between art and science students in terms of mental health, in which the mean and SD values of 150 art and 150 science students are 128.88 and 13.19, and 130.39 and 13.76, respectively. The mean difference of 1.51 is not significant at any level. So the hypothesis 6 there would be a significant difference between art and science students in terms of mental health is rejected. Kirmani and Suman (2010) studied gender differences in alcohol-related attitudes and expectancies among college students. Results revealed that boys had higher psychological distress along with a more favorable attitude toward alcohol than girls. Further, boys expected that alcohol use could lead to positive outcomes, while girls expected that alcohol use could lead to negative outcomes. Quadri and Akolkar (2011) made a study of mental health among college going students. A significant difference was found between male and female college going students. The result is that male college going students (mean value = 20.00) exhibit significantly better mental health as compared to their female counter-partners (mean value = 21.78). No significant difference was found between rural and urban college going students. Sharma (2014) studied the effect of gender and stream on depression among adolescents. The results demonstrated that gender and stream had a

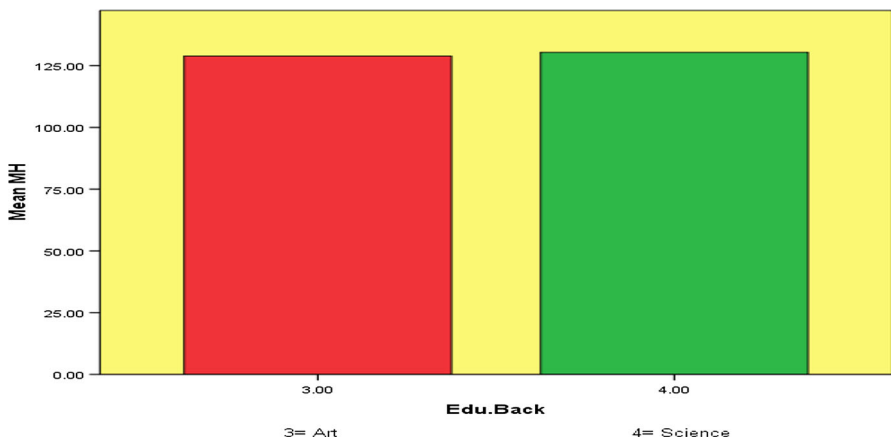


Fig. 6 Showing the comparison between arts and science students in terms of mental health

significant interaction effect on depression among adolescents. Both were dependent on each other to affect the depression score of students. Also, gender and stream differences emerged on depression. Girls showed higher score on depression as compared to boys, and arts students were more depressed as compared to science and commerce students. Results of the study indicated a clear effect of gender and stream on depression among adolescents. Alihosseini et al. (2014) studied the relationship between spiritual intelligence and its components with happiness in youths. The results of the independent *t* test show that there is a meaningful difference between female and male students in terms of the spiritual intelligence–happiness relationship with both variables larger in female students (Fig. 6).

Summary and Conclusion

The main purposes of the study, as research topic indicates, are to study the impact of spiritual intelligence, gender and educational background on mental health among college students. After reviewing the both works done outside India and in India, mainly, two research questions raised in the study: (1) Is there any significant relationship between spiritual intelligence and mental health among college students? (2) Is there any significant difference among college students on their spiritual intelligence and mental health in terms of gender and educational background? To explore these objectives, 6 hypotheses are formulated. For the collection of the data, all college students are selected from the different colleges in Haridwar. Two scales, Integrated Spiritual Intelligence Scale (ISIS) and Mithila Mental Health Status Inventory (MMHSI), are used to measure spiritual intelligence and mental health, respectively. After collecting the data, all the scores are listed. For analyzing relationship Pearson correlation method and for analyzing significance of the difference *t* test are used. All the statistical analyses are performed with the help of computer software SPSS. Findings of the study revealed that spiritual intelligence and mental health relate significantly among art students, and male and female arts students separately have a significant relationship between spiritual intelligence and mental health. Spiritual intelligence and mental health relate significantly among science students, and male and female science students separately have a significant relationship between spiritual intelligence and mental health. No significant difference is found between male and female students in terms of spiritual intelligence. No significant difference is found between arts and science students in terms of spiritual intelligence. Mean score of female students is higher than the mean score of male students on spiritual intelligence, and mean score of female arts students is higher than the mean score of male arts students on spiritual intelligence. Mean score of male arts students is higher than the mean score of male science students on spiritual intelligence, and mean score of male arts students is higher than the mean score of female science students on spiritual intelligence; however, differences are not statistically significant. Significant difference at 0.10 level is found between female arts and male science students in terms of spiritual intelligence, where mean score of female arts students is higher than the mean score of male science students on spiritual intelligence. Mean score of female arts students is higher than the mean score of female science students on spiritual intelligence; however, difference is not statistically significant. No significant difference is found between male and female students in terms of mental health. No significant difference is found between arts and science students in terms of mental health. Mean score of female arts students is lower than the mean score of male science students on mental health, which indicates better mental health of female arts

students compared to male science students; however, difference is not statistically significant.

Limitations and Implications for Future Research

The study is facing some limitations because of which future researchers are advised to implement the following suggestions for replicating such types of study also.

1. Area of the sample is limited with Haridwar City; it would be suitable if the sample is selected from other districts and states of the country.
2. Sample of the study is taken from the general population of college students only; it would be more suitable to select the sample from the spiritual practicing population also for such types of the study.
3. Scale of mental health, Mithila Mental Health Status Inventory (MMHSI), is not so good for the present scenario, because some items are confusing in the scale.
4. Study is limited with the exploration; it would be more valuable if the study will go with predictive purposes.

Conclusion

Finally, study reaches the conclusion that spiritual intelligence and mental health relate significantly among arts students, and male and female arts students separately have a significant relationship between spiritual intelligence and mental health. Spiritual intelligence and mental health relate significantly among science students, and male and female science students separately have a significant relationship between spiritual intelligence and mental health. No significant difference is found between male and female students in terms of spiritual intelligence. No significant difference is found between arts and science students in terms of spiritual intelligence. Mean score of female students is higher than the mean score of male students on spiritual intelligence, and mean score of female arts students is higher than the mean score of male arts students on spiritual intelligence. Mean score of male arts students is higher than the mean score of male science students on spiritual intelligence, and mean score of male arts students is higher than the mean score of female science students on spiritual intelligence; however, differences are not statistically significant. Significant difference at 0.10 level is found between female arts and male science students in terms of spiritual intelligence, where mean score of female arts students is higher than the mean score of male science students on spiritual intelligence. Mean score of female arts students is higher than the mean score of female science students on spiritual intelligence; however, difference is not statistically significant. No significant difference is found between male and female students in terms of mental health. No significant difference is found between arts and science students in terms of mental health. Mean score of female arts students is lower than the mean score of male science students on mental health, which indicates better mental health of female arts students compared to male science students; however, difference is not statistically significant. So on the basis of prior researches and the results of the present study, finally it may be concluded that spiritual intelligence may be helpful in improving mental health. Female students are better compared to male students in terms of spiritual intelligence, female arts students are better in terms of spiritual intelligence compared to other groups, and female arts students are better in terms of mental health compared to male science students; however, these differences are not statistically significant. This study needs further exploration that does spirituality

(spiritual intelligence) have actual difference in various groups or bounded not to any groups, sector, gender or race?

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Human and Animal Rights All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (RDC, Research Degree Committee) and American Psychological Association (APA). This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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