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Spiritual Intelligence as a Predictor of Mental Health Problems among High School Students

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This study investigated the relationship between Spiritual Intelligence (SI) and mental health problem scale and sub-scales (somatic symptoms, anxiety, social dysfunction and depression) among high school students. The participants in the study were students of 10th, 11th, and 12th grades from 8 public schools in Gorgan City which is located in the northern of Iran. They were 247 high school students, specifically comprised 124 boys and 123 girls, with age ranging between 15 – 17 years old. The research is quantitative in nature – correlation – and tested for the alternative hypotheses. Three valid and reliable instruments were used to assess the participants' SI, and mental health problems scale and sub-scales. Data analysis included frequencies, percentages, mean scores, Pearson's correlation and multiple regression analysis. The findings of this study supported the hypothesis that there were negative relationships between SI, and scale and sub-scales of mental health problems. The findings of this study indicate that students with high SI have Low mental health problem scale and sub-scales (somatic symptoms, anxiety, social dysfunction and depression). It was also found that the SI sub-scales are significant predictors for mental health problem scale and sub-scales.

Keywords: psychology, education, spiritual intelligence, mental health problems.

Adolescence is a critical developmental period characterized by biological, cognitive, and psychosocial changes in young people (Crockett & Petersen, 1993). This stage in one's life presents opportunities for

positive psychosocial growth and healthy life choices and conversely, the potential for the development of psychological difficulties and engagement in precarious behaviors (Crockett & Petersen, 1993). Though mental, emotional, and behavioral challenges may emerge during adolescence (Kazdin, 1993), many if not most, young people negotiate this life stage without serious difficulty (Petersen, 1988; Loh & Wragg, 2004).

The (World Health Organization [WHO], 2004) conceptualized mental health as separate from mental ill-health and defined the concept as a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and able to contribute to his or her own community (WHO, 2007, p. 1). Mental health is very important to the overall health and well-being of adolescents. Previous studies showed clear influence of better mental health versus mental ill-health on individuals and societies. Individually, mental health affects one's expressive, cognitive, perceptive, relational, and coping abilities, undergirding one's general health and well-being and capacity to integrate into and become productive members of society (Dwivedi & Harper, 2004). Better mental health outcomes in adolescents are characterized by greater adaptation in family, school, and society environment, improved quality of life, and reduced symptoms of psychological disorders (Hoagwood, K. Jensen, P.S. Petti, T. & Burns, B.J. 1996; USDHHS, 1999). Research has revealed an increasing incidence of depression and other mental health issues among adolescents and youth (e. g., Cash, 2003 Kubik, M. Y. Lytle, L. A. Birnbaum, A. S. Murray, D. M. & Perry, C. L. 2003; Masia-Warner, C. Nangle, D. W. & Hansen, D. J. 2006). Accordingly, several studies have been conducted to evaluate mental health in Iran (e.g., Emami, H. Ghazinour, M. Rezaeishiraz, H. & Richter, J. 2007; Yousefi, F. Mansor, M. Juhari, R. Redzuan, M. & Talib, M. 2010), and their findings show that mental health problems are extremely serious ones

for adolescents in urban area in Iran and probably in Iranian adolescents overall (Emami et al., 2007).

Another point to note, the importance of spirituality and spiritual development in humans has attracted psychologists and mental health specialists' attention since several decades ago. The advancement in the psychology of the dynamic and complex essence of new societies has created more attention to human spiritual needs rather than material demands. Nowadays, more than ever, people have more tendency to focus on spirituality. Furthermore, psychologists and psychiatrists have understood that the usage of traditional and simple methods to solve an individual's problems is insufficient (West, 2004).

SI is a new paradigm which appears to have emerged sometime after the Theory of Multiple Intelligences was introduced by Gardner (1983) in his book *Frames of Mind: The Theory of Multiple Intelligences*. In view of Gardner's theory, existential intelligence can be defined as an ability to find and understand the meaning in life (Halama & Strizenec, 2004). Based on this definition, Halama and Strizenec (2004) suggested that the ability to find and realize meaning in life is an important element of SI. SI involves a set of abilities that draw on spiritual resources, it can be concluded that existential and SI is non-identical but mutually related and is overlapping constructs (Halama & Strizenec 2004). Drawing on Gardner's definition of intelligence, Emmons (2000b) argued that spirituality can be viewed as a form of intelligence because it predicts functioning and adaptation and offers capabilities that enable people to solve problems and attain goals. Earlier, Emmons (1999) defined spirituality as the search for, and the experience of elements of sacred meaning, higher consciousness, and transcendence. SI entails the abilities that draw on such spiritual themes to predict functioning and adaptation and to produce valuable products or outcomes.

Zohar and Marshall (2000) described SI as the "intelligence with which we address and solve problems of meaning and value, the intelligence with

which we can place our actions and our lives in a wider, richer, meaning-giving context, the intelligence with which we can assess that one course of action or one life-path is more meaningful than another” (p. 3). Zohar and Marshall’s definition also highlights and hints at linking SI to a sense of connection to the wider and greater whole. Nasel (2004) described spiritual intelligence as “the application of spiritual abilities and resources to practical contexts. People use spiritual intelligence when they draw on their spiritual abilities and resources to make meaningful decisions, deliberate over existential issues, or attempt problem solving in daily life” (p. 42).

Levin (2000) argued that SI is exhibited when we live in a way that integrates spirituality into our daily life. Levin suggests that the development of SI requires the recognition of our interconnection to all of life, and the capacity to utilize perceptual powers beyond the five senses including our intuition, which is seen as another level of consciousness and intelligence beyond analytical, linear, and rational thought. Wolman (2001) defined spiritual intelligence as “the human capacity to ask ultimate questions about the meaning of life and to simultaneously experience the seamless connection between each of us and the world in which we live” (p. 83). Schuller (2005) stated “SI integrates our way of being so that we can bring focus to our visions and passions, so that we can learn the discipline of a long-term point of view; so that we may unswervingly direct ourselves toward a life of morality and fairness; and so that we may believe in ourselves and others and be willing to make personal sacrifices in the interest of causes larger than ourselves” (p. xi).

SI can be differentiated from spirituality in general, spiritual experience (e.g., a unitary state), or spiritual belief (e.g., a belief in God), (2007). From the interviews of a qualitative analysis, Amram (2007, 2009) identified seven major themes and several sub-themes that emerged in the SI model. 1. Consciousness: Developed refined awareness and self-knowledge. a) Mindfulness: Knowing self and living consciously with a

clear intention and mindful, embodied awareness and presence. b) Trans-rational knowing: Transcending rationality through the synthesis of paradoxes and using various states/modes of consciousness (e.g., meditation, prayer, silence, intuition and dreams) to access knowledge. c) Practice: Using a variety of practices to develop and refine consciousness or spiritual qualities.

2. Grace: Living in alignment with the sacred, manifesting love for, and trust in life. a) Sacred: Living in alignment with the divine, a universal life force, nature, or one's true essential nature. b) Love of life: Reverence and cherishing of life based on gratitude, beauty, vitality and joy. c) Trust: Hopeful/optimistic outlook based on faith or trust.

3. Meaning: Experiencing significance in daily activities through a sense of purpose and a call for service, including in the face of pain and suffering.

4. Transcendence: Going beyond the separate egoistic self into an interconnected wholeness. a) Relational I-Thou: Nurturing relationships and community with acceptance, respect, empathy, compassion, loving-kindness, generosity, and I-Thou orientation. b) Holism: Utilising a system of perspective by seeing the wholeness, unity and the interconnections among diversity and differentiation.

5. Truth: Living in open acceptance, curiosity and love for all creation (all that is). a) Acceptance: Forgive, embrace and love what is, including the negative and shadow. b) Openness: Open heart and mind, open curiosity, including open respect for the wisdom of multiple traditions.

6. Serenity: Peaceful surrender to Self (Truth, God, Absolute, true nature). a) Peacefulness: Centered, equanimity, self-acceptance, self-compassion and inner-wholeness. b) Egolessness: Letting go of persona to maintain humble receptivity, surrendering and allowing what wants and needs to happen.

7. Inner-Directedness: Inner-freedom aligned to responsible wise action. a) Freedom: Liberation from conditioning, attachments and fears, manifesting courage, creativity and playfulness. b) Discernment: Wisdom to know truth using an inner-compass (conscience). c) Integrity:

Being/acting authentically, responsibly and with alignment to one's values.

Taking into consideration the above notions, the rise in mental health issues among adolescents is a growing concern in schools and among community counselors, and educators. Research has revealed an increasing incidence of depression and other mental health issues among youths (Cash, 2003). Spiritual functions including spirituality and SI can be used as a possible instrument to decrease one's mental health problems, the importance of spirituality and spiritual development in humans has attracted psychologists and mental health specialists' attention since several decades ago.

Some evidence can be seen that spiritual development and spiritual experiences are helpful for health. For example, research has found that there is a significant relationship between awareness of spiritual experiences and health (Hay & Morisy, 1978), and self esteem and religious faith (Forst & Healy, 1990). Research also suggests a relationship between spirituality, life purpose and satisfaction, health, and well-being (George, et al., 2000; Veach & Chappel, 1992). Moreover, spiritual experiences can be considered as self-healing equipment (West, 2004) because it seems that spiritual functions including SI and its components can be used as an instrument in relation to one's mental health. Elmer et al., (2003), reviewed a research on the impact of spirituality on health and found that it contributes to lower disease rate and longer life. When facing an injury, spiritually oriented people seem to respond better to intervention, better handle trauma (Emmons, 2000a, 2000b), and have lower depression rates (Macdonald & Friedman, 2002). Consequently, concerning the mentioned review, the purpose of the study was to investigate the relationship of SI scale and sub-scales with mental health problems scale and sub-scales. All these ideas are reflected in the following hypotheses :

- The SI scale and sub-scales are correlate negatively with mental health problem scale and sub-scales (total mental health problems, somatic symptoms, anxiety, social dysfunction and depression).

- The SI scale and sub-scales are predicted through levels of mental health problems scale and sub-scales (total mental health problems, somatic symptoms, anxiety, social dysfunction and depression).

Method

Research Design

The purpose of this study was to determine if any relationship exists between spiritual intelligences scale and sub-scales, selected demographic variables, and the mental health problems scale and sub-scales of students at a public high school in Gorgan city of the Golestan province, Iran. The researcher utilized a corelational research design with hypotheses and tests for the alternative hypotheses.

Sample

Two hundred and forty seven Iranian high school students in Gorgan city, Iran (124 females and 123 males) were chosen as the respondents in this study. Their ages ranged from 15–17 years. The respondents were selected through random cluster sampling, and their participation was voluntary and anonymous.

Procedure

Due to the factor that the population of the study spreads widely across the whole of Gorgan and it would be impractical and too expensive for the researcher to select individual members from the population, a random cluster sampling was used as the technique to select the sample for this study. As the random cluster sampling was used, the unit of selection called the cluster or group was selected from the target population. In this study, the clusters identified were all schools of the 10th, 11th and 12th

grade students from Gorgan City, Golestan Province, Iran. Using the cluster random sampling method, eight of the high schools were randomly selected. The researcher selected schools from the Gorgan city of Golestan province. To establish the power developed G*POWER (Faul and Eldfelder, 1992) in determining the adequate sample size, 168 was the minimum but the researcher decided to use a sample size of 247 to surmount non-responsiveness and incomplete replies. Hence, by selecting 8 high schools with 16 classes from each school, the total sample size was 247.

Measures

All the participants responded to the three instruments which had been translated into Persian language, as follows:

General Health Questionnaire (GHQ-28, Goldberg, 1972; Goldberg & Williams, 1998). In 1972, Goldberg developed a simple questionnaire, which has been the most widely used instrument for detecting non-psychotic psychiatric “Cases”, i. e., the General Health Questionnaire (GHQ). GHQ is a self-administered screening questionnaire used to diagnose psychiatric disorders in both primary care and the community. GHQ has several benefits, which include easy to administer, brief, and objective. Several versions of GHQ are also available: a 60-item version, and shorter versions (comprising 30, 28 and 12 items). The 28-item version (GHQ-28), developed by Goldberg and Hillier (1979), was constructed on a different basis compared to the other versions. In this study, GHQ-28 in the Iranian version which had been adapted by Yaghobi (1995) and Palahang, (1996) was used. The responses were anchored on a four-point scale ranging from “less than usual”, to “much more than usual”. Out of the four possible ways of scoring this instrument (Goldberg & Williams, 1998), the simple Likert method (0–1–2–3) was chosen for the current study. The measure yielded an overall health score (range 0–

84) and composed of four sub-scales that were described as somatic symptoms, anxiety and insomnia, social dysfunction, and depression. High scores indicated high levels of psychological strain. For the mental health problems scale and sub-scales in the pre-test study with 54 samples, (Shabani, 2011), the Cronbach's alpha value obtained for each of the mental health problems scale and sub-scales were .91, .70, .74, .72 and .87 for the total mental health problems, somatic symptoms, anxiety, social dysfunction and Depression, respectively, (See Table 1).

Table 1
Descriptive Statistics and Result of Reliability Tests

Variables	Minimum	Maximum	Mean	Std. Deviation	Cronbach's alpha
Spiritual Intelligence	1.909	5.739	3.892	18.94683	.741
Consciousness	3.444	4.926	4.148	3.89323	.590
Grace	3.313	4.948	4.273	7.49199	.600
Meaning	3.815	4.907	4.514	4.03483	.603
Transcendence	2.056	5.074	4.059	5.72159	.620
Truth	2.741	4.889	3.782	7.54463	.607
Mental Health Problems	.370	1.574	.952	13.66190	.913
Somatic Symptoms	.370	1.185	.804	3.57822	.706
Anxiety	.778	1.333	.987	4.16757	.748
Social Dysfunction	1.019	1.574	1.251	3.39220	.724
Depression	.537	1.481	.765	5.19128	.879

Note: N = 54 (Unpublished Doctoral Dissertation, Shabani, 2011).

Integrated Spiritual Intelligence Scale (ISIS) (Amram & Dryer, 2008). In this study, the Amram and Dryer's Integrated Spiritual Intelligence Scale (ISIS), which had been adapted and translated by Shabani (2011) to suit the Iranian context was administered for the measurement of spiritual intelligence. ISIS consists of an 83-item long form, and a 45-item short form, self-report and observer-rated instrument containing 22 subscales assessing separate capabilities that are grouped into five main domain scales of spiritual intelligence. In addition to the full 83-item scale, a 45-item short-form version of the ISIS is also available. The short version uses two items for each of the capability subscales, plus one overall validity item. This short-form shows a correlation of .99 with the overall long-form ISIS score. Correlations of the short form with the long form ranged from 0.94 to .98 for each of the five domain scales and from .82 to 1.00 for each of the 22 capability subscales. (Correlation of 1.00 is reported for the Gratitude subscale, which contains the same two items in both the long- and short-forms). The responses were anchored on a six-point scale ranging from 1 ("never or almost never") to 6 ("always or almost always"). Amram and Dryer (2008) reported a Cronbach's alpha value for each of the five ISIS domains as follows: Consciousness, 0.84; Grace, .91; Meaning, .86; Transcendence, .95; and Truth, .90. The internal consistency of the subscales was also moderate to high ranging from .62 to .88, with a mean value of .75. The Cronbach's alpha values for the subscales were as follows: Beauty, .79; Discernment, .75; Egolessness, .62; Equanimity, .74; Freedom, .77; Gratitude, .72; Higher-Self, .87; Holism, .82; Immanence, .77; Inner-Wholeness, .71; Intuition, .71; Joy, .74; Mindfulness, .71; Openness, .70; Practice, .88; Presence, .73; Purpose, .70; Relatedness, .68; Sacredness, .87; Service, .82; Synthesis, .70; and Trust, .77. The test-retest reliability of ISIS was reported at .77. ISIS was selected for this research, given its strong psychometric properties, and because it offered the best match with the theoretical model and definition of spiritual intelligence. The short form of the ISIS will be used because it

takes less time to do by students and is highly correlated with the long form. For the ISIS scale and sub-scales in the pre-test study with 54 samples, (Shabani, 2011), the Cronbach's alpha value obtained for each of the ISIS scale and sub-scales were .74, .59, .60, .60, .62 and .60 for total ISIS, Consciousness, Grace, Meaning, Transcendence and Truth, respectively, (See Table 1).

Results

To attain the main objectives of the present study, the collected data were subjected to a number of statistical analyses by using Statistical Package for Social Sciences (SPSS 17.0). Apart from this, descriptive statistics, and Pearson correlation and multiple regression analyses were also employed in this study.

Descriptive Statistics

Table 2 indicates the means and standard deviations for all the observed variables. The descriptive statistics was worked out to view the pattern of the score distribution. A perusal of Table 2 reveals that the mean score for SI is 3.93, with the SD of .36, and the mental health's mean score is .91 with the SD of .43. Table 2 shows the mean and standard deviation of the mental health problems sub-scales. (See Table 2)

Correlations

Correlations between variables were computed through Pearson correlation method. It was aimed at examining the degree of association between the measures of SI scale and sub-scales and mental health problems scale and sub-scales. The findings as depicted in Table 3 showed that firstly, there was a negative significant relationship between each pair of variables of students' total SI ($r = -.553$, $p < .01$), consciousness ($r = -.172$, $p < .05$), grace ($r = -.560$, $p < .01$), meaning ($r = -.298$, $p < .01$), transcendence ($r = -.265$, $p < .01$), truth ($r = -.356$, $p < .01$), and their mental

health problems. Secondly, between students' total SI ($r = -.413, p < .01$), grace ($r = -.411, p < .01$), meaning ($r = -.190, p < .01$), transcendence ($r = -.177, p < .01$), truth ($r = -.316, p < .01$), and their somatic symptoms. Thirdly, between students' total SI ($r = -.398, p < .01$), grace ($r = -.427, p < .01$), meaning ($r = -.152, p < .05$), transcendence ($r = -.161, p < .05$), truth ($r = -.323, p < .01$), and their anxiety. Fourthly, between students' total SI ($r = -.494, p < .01$), Consciousness ($r = -.200, p < .01$), grace ($r = -.443, p < .01$), meaning ($r = -.333, p < .01$), transcendence ($r = -.291, p < .01$), truth ($r = -.265, p < .01$), and their social dysfunction. Finally, between students' total SI ($r = -.453, p < .01$), Consciousness ($r = -.166, p < .01$), grace ($r = -.478, p < .01$), meaning ($r = -.276, p < .01$), transcendence ($r = -.224, p < .01$), truth ($r = -.239, p < .01$), and their depression. (See Table 3).

Table 2
Means & Standard Deviations of Variables

Variables	Minimum	Maximum	Mean	Std. Deviation
Spiritual Intelligence (SI)	3.02	4.87	3.9340	.35637
SI Sub-Scales				
Consciousness	2.00	5.83	4.1889	.66451
Grace	2.92	5.92	4.3863	.57133
Meaning	1.75	5.50	3.8047	.68450
Transcendence	2.70	5.40	4.1328	.53338
Truth	1.75	4.42	3.1005	.54169
Mental Health Problems (MHP)	.04	2.04	.9110	.42770
MHP Sub-Scales				
Somatic Symptoms	.00	2.57	.8184	.48238
Anxiety	.00	3.86	.9213	.54612
Social Dysfunction	.00	2.14	1.0891	.40529
Depression	.00	3.43	.8155	.72666

Note: N= 247

Table 3
Result of Pearson Correlations between the Research Variables (Inter)

Variables	Mental Health Problems	Somatic Symptoms	Anxiety	Social Dysfunction	Depression
Total Spiritual Intelligence (SI)	-.553**	-.413**	-.398**	-.494**	-.453**
Consciousness	-.172**	-.105	-.076	-.200**	-.166**
Grace	-.560**	-.411**	-.427**	-.443**	-.478**
Meaning	-.298**	-.190**	-.152*	-.333**	-.276**
Transcendence	-.265**	-.177**	-.161*	-.291**	-.224**
Truth	-.356**	-.316**	-.323**	-.265**	-.239**

** p < .01, * p < .05, N= 274

Multiple Regression Analysis (MRA)

MRA provides an opportunity, with little ambiguity, to assess the importance of each of the predictors to the overall relationship. Tables 4 show the results of the multiple regressions, indicating the impact of the SI dimension on mental health problems scale and sub-scales. The MRA results for the Predictive of SI Sub-scales on mental health Problems are presented in Table 4.

The findings show that the MRA indicates that the SI sub-scales are significant predictors for the total mental health problems ($R^2 = .376$, $F = 29.005$, and $p < .05$). R^2 value means 37.6% of the variance in mental health problems decrease is explained by SI sub-scales. Based on the results of the MLR model in this study, the sub-scales grace (X_2), and truth (X_5) show significant contributions toward the prediction of mental health problems ($bX_2 = -7.703$, and $bX_5 = -4.346$).

The SI sub-scales are significant predictors for somatic symptoms ($R^2 = .226$, $F = 14.067$ and $p < .05$). R^2 value means 22.6% of the variance in somatic symptoms decrease is explained by SI sub-scales. Based on the results of the MLR model in this study, the sub-scales grace (X_2), and truth

(X5) show significant contributions toward the prediction of somatic symptoms ($bX_2 = -5.125$ and $bX_5 = -4.039$).

The SI sub-scales are significant predictors for anxiety. $R^2 = .245$, $F = 15.637$ and $p < .05$. R^2 value means 24.5% of the variance in anxiety decrease is explained by SI sub-scales. Based on the results of the MLR model in this study, the sub-scales grace (X_2), and truth (X_5) show significant contributions toward the prediction of anxiety ($bX_2 = -5.819$ and $bX_5 = -4.291$).

The SI sub-scales are significant predictors for social dysfunction. This Table shows that $R^2 = .256$, $F = 16.620$ and $p < .05$. R^2 value means 25.6% of the variance in social dysfunction decrease is explained by SI sub-scales. Based on the results of the MLR model in this study, the sub-scales grace (X_2), truth (X_5) and (X_3) portray significant contributions toward the prediction of social dysfunction ($bX_2 = -4.497$, $bX_5 = -2.596$ and $bX_3 = -1.894$).

The MRA indicates that the SI sub-scales are significant predictors for depression ($R^2 = .255$, $F = 16.511$ and $p < .05$). R^2 value means 25.5% of the variance in depression decrease is explained by SI sub-scales. Based on the results of the MLR model in this study, the sub-scales grace (X_2), and truth (X_5) show significant contributions toward the prediction of depression ($bX_2 = -6.223$, and $bX_5 = -1.942$). (See Table 4).

Table4
Results of Multiple Regression Analyses (enter)

Dependent Variables	Predictors	R ²	F	β	t	p
Mental Health Problems	(constant)	.376	29.005		13.943	.000
	Consciousness			-.041	-.722	.471
	Grace			-.478	-7.703	.000
	Meaning			-.021	-.351	.726
	Transcendence			-.017	-.265	.792
	Truth			-.252	-4.346	.000
Somatic Symptoms	(constant)	.226	14.067		9.646	.000
	Consciousness			-.026	-.410	.682
	Grace			-.354	-5.125	.000
	Meaning			.044	.652	.515
	Transcendence			-.018	-.255	.799
	Truth			-.261	-4.039	.000
Anxiety	(constant)	.245	15.637		9.558	.000
	Consciousness			.000	.004	.997
	Grace			-.397	-5.819	.000
	Meaning			.093	1.413	.159
	Transcendence			-.008	-.114	.910
	Truth			-.274	-4.291	.000
Social Dysfunction	(constant)	.256	16.620		12.678	.000
	Consciousness			-.066	-1.051	.295
	Grace			-.305	-4.497	.000
	Meaning			.039	-1.894	.059
	Transcendence			-.080	-1.149	.252
	Truth			-.164	-2.596	.010
Depression	(constant)	.255	16.511		9.226	.000
	Consciousness			-.044	-.700	.485
	Grace			-.422	-6.223	.000
	Meaning			-.080	-1.215	.226
	Transcendence			.023	.335	.738
	Truth			-.123	-1.942	.053

Note: N= 274

Discussion

The interpretation of our findings is somewhat limited because of the particularly selective nature of the investigated sample, which is only representative of 15–17 year-old, high school students from Gorgan City of Iran. However, the findings might be representative of all Iranian high school students because they are all subject to similar social pressure as well as pressure to perform well in the university entrance examination. This study is the first of its kind in Gorgan city, Iran, particularly due to its use of the SI instrument. The study utilized a locally-adapted instrument to determine the relationships of SI with mental health problems. SI which was defined by Amram “as the ability to apply, manifest, and embody spiritual resources, values, and qualities to enhance daily functioning and well-being” is also proven to be applicable among the participants of this study. The high reliability coefficient for the instrument that measured SI supports the conceptualization of the five dimensions of Consciousness, Grace, Meaning, Transcendence, and Truth scales. Hence, these results provide evidence for the validity of SI scores to be used as a single score for the independent variable.

The results demonstrated negative significant relationships between total SI, consciousness, grace, meaning, transcendence, and truth with total mental health problems, social dysfunction, and depression, as well as negative significant relationships between Gorganian high school students’ total SI, grace, meaning, transcendence, and truth, with somatic symptoms and anxiety. These findings flow in line with the earlier findings of comparable research, (e.g., Hay & Morisy, 1990; Emmons, 2000b; Nobel, 2000; Zohar & Marshall, 2000; West, 2004). The findings of this study do not only provide evidence for the importance of SI scale and sub-scales but also establish possible avenues to address mental health problems scale and sub-scales at schools. Moreover, the results of this study offer insight into SI that may contribute to students’ functions. Hence, Gorganian high schools’ counselors or teachers could utilize the results of the study to add

to or further improve their existing strategies for individuals or groups consultation when dealing with mental health problems in students. SI may significantly promote better positive mental health while protecting ones against mental health problems outcomes.

Although mental health problems has been the focus of extensive discussion and empirical investigations by many researchers for decades, no study has thus far investigated the relationships between mental health problems scale and sub-scales and SI scale and sub-scales simultaneously. In exploring the literature, cluster of factors began to emerge which were mostly associated with students' positive mental health at school. Past researchers did not only explore the existing elements of students' mental health problems but they also looked at other mental health problems correlated factors.

This study demonstrates the existence of negative but significant relationships between SI scale and sub-scales and mental health problems scale and sub-scales. This result has implications for Gorganian high schools' students, teachers, parents, school counselors, psychologists and administrators in that they may need to pay special attention to targeting better and appropriate strategies if they want high school students to attain better mental health and performance. These findings provide a base of knowledge for health administrators and healthcare providers at national and regional levels for the development of spiritual policies related to adolescents' mental health problems. Therefore, this study proposes periodic mental health problems surveys in high schools to identify students who are in need of counseling interventions or treatments in order to improve their coping skills and problem solving abilities. Such act could not only help to enhance adolescents' coping strategies with their mental health problems, but also to improve their general coping and problem-solving skills, and even to prevent the onset of mental health problems.

Gorganian high school psychologists and counselors could use the GHQ for various purposes: as a screening measure for general psychological health, to search for students who suffer mental health problems, and to introduce them for counseling or treatment in order to improve their coping skills and problem solving abilities. Specifically, using GHQ that measures somatic symptoms, anxiety, social dysfunction and depression can help counsellors or clinical psychologists to prepare a more focused treatment plan. Moreover, having knowledge on the symptoms of mental health problems scale and sub-scales can provide preventive measures to students. The findings also showed that SI scale and sub-scales are significant predictors that reduce high school students' mental health problems scale and sub-scales in Gorgan city, Iran and probably in Iranian adolescents overall. This study also provides pertinent and reliable input for future studies to clarify the psychological determinants of adolescents' mental health problems. It provides a base of knowledge for health administrators and healthcare providers at national and regional levels for the development of health policies related to adolescent mental health problems.

Conclusion

The purpose of the present study was to explain the relationship between SI and mental health problems scale and sub-scales of 15–17 year-old high school students from Gorgan City in Iran. The results of the present study showed that the Gorganian high school students' SI was negatively but significantly correlated with the scale and sub-scales of their mental health problems. Based on the results from the multiple linear regression (MLR) models, the predictor variables (SI and SI subscales) were found to be of significance in explaining the scale and some of the sub-scales of the mental health problems. In sum, the results of this particular study support the theories that SI is a significant predictor for the scale and sub-scales of mental health problems. Therefore, the findings

of this study support the influence of students' SI on the scale and sub-scales of their mental health problems. Moreover, the existence of SI relationships and mental health problems has been clearly demonstrated among high school students.

This study shows that Gorganian high school students' SI has a significant role in reducing the scale and sub-scales of their mental health problems. Therefore, Gorganian high schools' counsellors and administrators, educational psychologists and parents should focus on developing students' SI. In addition, this study also adopted Amram's (2007) definition of SI as the ability to apply, manifest, and embody spiritual resources, values, and qualities, to enhance daily functioning and well-being.

Nonetheless, it is also crucial to highlight that the results of the current study may have implications for teachers, school counselors, psychologists, etc. in Gorgan City and probably in general in Iran, i.e., they may need to pay special attention and utilize better and appropriate strategies if they want high school students to attain low mental health problems and better performance. Even more so, these findings have provided a basis of knowledge for health administrators and healthcare providers at the national and regional levels for the development of spiritual policies related to adolescents' mental health problems in Gorgan City, and probably in general in Iran. Therefore, it is proposed that periodic mental health problems surveys be conducted in Gorgan City and probably among the general high schools in Iran so as to identify students who are in need of counseling interventions or treatments to improve their coping skills and problem solving abilities. Such an act will not only help to enhance students' coping strategies with their mental health problem scale and sub-scales, but also improve their general coping and problem-solving skills, apart from preventing the onset of mental health problem scale and sub-scales.

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