

# The Mediating Role of Emotional Intelligence between Spiritual Intelligence and Mental Health Problems among Iranian Adolescents

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**Abstract** This study examined the mediating role of emotional intelligence between spiritual intelligence and mental health. The participants in the study were 247 high school Iranian students, (124 male and 123 female, in the age range between 15 and 17 years old). The results showed that spiritual and emotional intelligences explained mental health problems differently. Structural equation modelling revealed that spiritual intelligence had indirect effect on mental health problems, via emotional intelligence. These findings have implications for prevention of mental health problems among adolescent.

**Keywords** Spiritual intelligence · Emotional intelligence · Adolescents · Mental health

## Introduction

Among adolescents, mental health outcomes are often characterized by greater adaptation to family, school, and society environment, improved quality of life, and reduced symptoms of psychological disorders (Hoagwood et al. 1996; USDHHS 1999). Research has revealed an increasing incidence of emotional malaise and other mental health problems among adolescents and youth (Cash 2003; Masia-Warner et al. 2006). The studies of mental health in Iran

(Emami et al. 2007; Hosseini et al. 2010a; Shabani et al. 2011; Yousefi et al. 2010) show that mental health issues are posing serious problems for adolescents particularly in the urban areas of Iran.

Recognizing feelings and finding ways to deal with those emotions, generally known as Emotional Intelligence (EI), is important for mental health (Martins et al. 2010). EI has been approached as an ability as well as a personality dimension (Bar-On 2001; Goleman 1995; Salovey and Mayer 1990).

Paralleling to the development of EI construct, spiritual intelligence (SI) involves a set of abilities that draw on spiritual resources. SI refers to the search for, and the experience of elements of the sacred meaning, higher consciousness, and transcendence, spiritual intelligence entails the abilities that draw on such spiritual themes to predict functioning and adaptation and to produce valuable products or outcomes (Emmons 1999).

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 and Strizenec 2004). On the same note, 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. Zohar and Marshall (2000) stressed on the utility of SI in solving problems of meanings, values, and those of existential nature, concurring with Vaughan (2002) and Wolman (2001).

This study aimed to examine the relationship between EI, SI and mental health. Based on the Gardner's theory (1983) of multiple intelligences and previous empirical explanations for investigating this association, it was hypothesized that SI indirectly influences adolescent mental health through EI. First, EI will decrease the probability of the adolescent's mental health problems. Second, SI is expected

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to predict EI. SI, in turn, is predicted to reduce the adolescent's mental health problems.

More extant research has found EI predicts mental health more than SI (Shabani et al. 2010). Therefore, we expect the coefficients for the paths linking EI and mental health to be higher than SI and the mediator between SI and mental health problems. For mediating role, as suggested Baron and Kenny (1986) and exemplified by McMahan and Renken (2011) the mediator has to be significantly related to the predictor and the criterion variables. Accordingly, in this study, we tested for the significant relationship between EI and SI; and EI and mental health problems.

## Method

### Sample

The participants were 247 high school students (124 males, 50.2 % of the sample, and 123 females, 49.8 % of the sample). Participation in the study was voluntary. The percentages of the age groups of 15, 16, and 17 years were 33.2 %, 33.6 %, and 33.2 %, respectively. The respondents were in low, moderate, high and very high economic status comprised 9.3 % (23 cases), 47.4 % (117 cases), 34.8 % (86 cases), and 8.5 % (21 cases), respectively. In terms of parental education, 6 (2.4 %) of the students' fathers were illiterate, 84 (34 %) had elementary and secondary education, 100 (40.5 %) had diploma certification, and 57 (23.1 %) had university degrees. Accordingly, 17 (6.9 %) students' mothers were illiterate, 120 (48.6 %) had elementary and secondary education, 84 (34 %) had diploma certification, and 26 (10.5 %) had university level degrees.

### Procedure

Data were gathered in class room setting in groups using random cluster sampling procedure. The measure was distributed to the participants with the help of teachers.

### Measures

**General Health Questionnaire** Mental health problems were measured with the GHQ-28 (Goldberg 1972; Goldberg and Hillier 1979). In 1972, Goldberg developed the General Health Questionnaire (GHQ), which is the most widely used instrument for detecting non-psychotic psychiatric cases. The GHQ is a self-administered screening questionnaire used to diagnose psychiatric disorders both in primary care and in the community. Several versions of GHQ are 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 that excluded physical illness when compared with the longer versions. Responses were anchored on a four-point scale ranging from "less than usual", to "much more than usual". Of the four possible ways of scoring this instrument (Goldberg and Williams 1998), this study chose the Likert-type scale (0–1–2–3). The measure yielded an overall health score (range 0–84) and was composed of four sub-scales described as somatic symptoms, anxiety and insomnia, social dysfunction and depression. High scores indicated high levels of psychological strain. The measure was found to have an acceptable level of internal consistency reliability ( $\alpha=0.92$ ). High scores on this scale indicated poor general health.

**The Integrated Spiritual Intelligence Scale** Spiritual intelligence was assessed using the 45-item short form of ISIS (Amram and Dryer 2008). ISIS is an 83-item long form, and a 45-item short form, a self-report and observer-rated instrument containing 22 sub-scales assessing separate capabilities that are grouped into five main domain scales of spiritual intelligence. Responses were anchored on a six-point scale ranging from 1, indicating "never or almost never" to 6, "always or almost always". The measure yielded an overall SI scores (range 45–270). An adaptation of ISIS into Persian language used back-translation procedure. It was first translated into Persian language, then translated it back to English and compared to the original

**Table 1** Descriptive statistics of the variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Spiritual Intelligence (SI)	247	3.02	4.87	3.9340	0.35637
Emotional Intelligence (EI)	247	2.15	3.67	2.9028	0.29031
Mental Health Problems	247	0.04	2.04	0.9110	0.42770
MHP Sub-Scales					
Somatic Symptoms	247	0.00	2.57	0.8184	0.48238
Anxiety	247	0.00	3.86	0.9213	0.54612
Social Dysfunction	247	0.00	2.14	1.0891	0.40529
Depression	247	0.00	3.43	0.8155	0.72666

MHP mental health problems

**Table 2** Correlation matrix between EI, SI, Mental health problems and the subscales

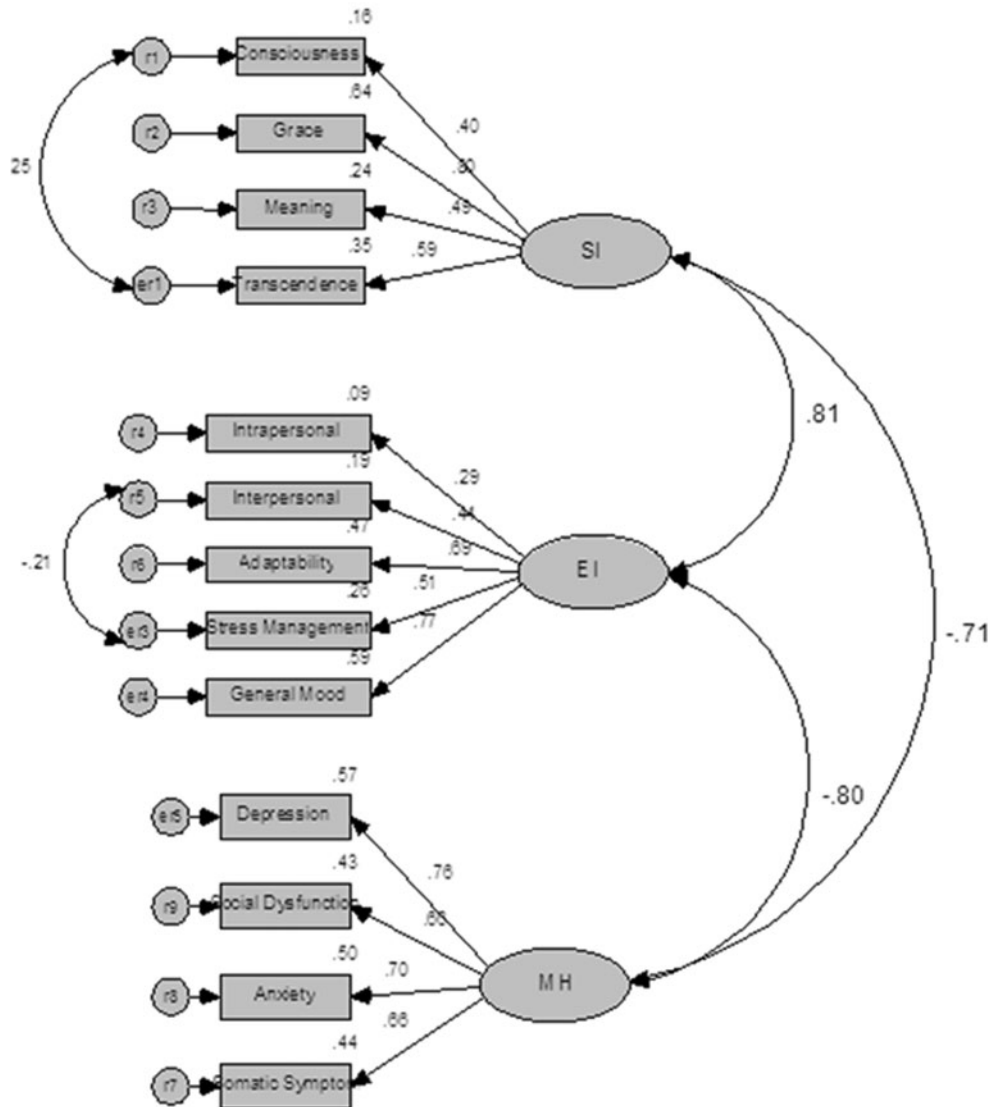
Variable	EI	SI	MH	SS	A	SD	D
Emotional Intelligence	1.00						
Spiritual Intelligence	0.628**	1.00					
Total Mental Health Problems	-0.598**	-0.553**	1.00				
Somatic Symptoms	-0.415**	-0.413**	0.761**	1.00			
Anxiety	-0.443**	-0.398**	0.810**	0.494**	1.00		
Social Dysfunction	-0.527**	-0.494**	0.678**	0.402**	0.449**	1.00	
Depression	-0.504**	-0.453**	0.862**	0.533**	0.576**	0.435**	1.00

Correlation is significant at the 0.01 level (2-tailed), \*\* $p < 0.01$ ,  $N = 247$

**Fig. 1** Measurement model of Spiritual Intelligence (SI), Emotional Intelligence (EI) and Mental Health problem (MH). Note. All estimated coefficients are standardized

**Chi-square = 141.430(60 df)**  
**GFI = .915**  
**IFI = .914**  
**CFI = .913**  
**RMSEA = .074**

SQ -EQ and MH



version. The adapted instrument was pilot tested on 30, Iranian students, then was conducted on 120 Iranian students (Hosseini et al. 2010b). In this study, for the overall reliability, the translated Iranian version of ISIS had a Cronbach's alpha of 0.76.

*Emotional Intelligence Inventory: Youth Version* Developed by Bar-On and Parker (2000), IEQ-I YV has 60 items. Responses were anchored on a 4-point scale ranging from "very seldom true of me" to "very often true of me". This study chose the Likert-type scale (1–2–3–4). The measure yielded an overall EI scores (range 60–240). The translated version of this questionnaire was employed in order to avoid any misunderstanding due to culture differences regarding the content of the questionnaire for lower-level students (Fahim and Pishghadam 2007). In this study, the overall

reliability of the translated Iranian version IEQ-I YV had a Cronbach alpha of 0.74.

*Data Analysis* Structural equation modelling (SEM) was used to test the hypothesized model of meditational role for EI; between SI and adolescent's mental health problems using Amos 18.0 (Arbuckle 2009). A conservative two-step approach as suggested by Anderson and Gerbing (1988) and illustrated by Hair et al. (2006) and Byrne (2010) was adopted. The item parcelling strategies that have shown more advantageous for ordinal data (Hall et al. 1999; Nasser and Takahashi 2003; Kline 2010) were also adopted. A string of fit statistics ( $\chi^2/df < 5$ , GFI, AGFI, IFI, TLI, CFI  $> 9$ , RMSEA  $< 0.08$ ) was used to evaluate the model-fit-the data for both measurement and structural models (Bentler 2007; Kline 2010). Modification indices provided in AMOS

Chi-square = 142.503(61 df)

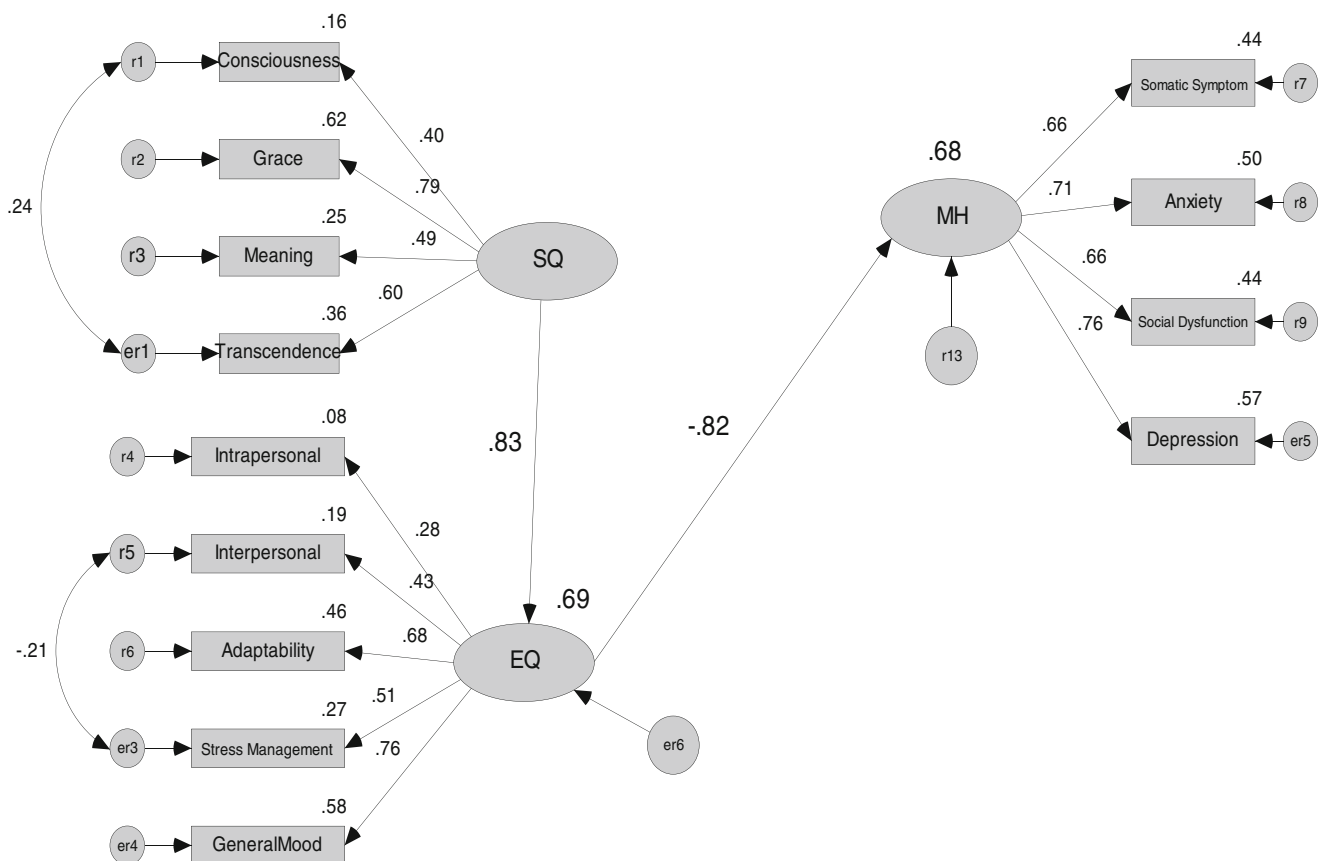
GFI =.914

IFI =.914

CFI =.912

RMSEA =.074

## SQ -EQ and MH



**Fig. 2** Structural model of the inter-relationships among Spiritual Intelligence (SI), Emotional Intelligence (EI) and Mental Health problems (MH). Note. All estimated coefficients are standardized

18.0 was used prudently to improve the model fit and non-significant path was deleted (Arbuckle 2009).

## Results

### Preliminary Analyses

Tables 1 and 2 present the descriptive statistics for the variables. The constructs of SI and EI, were negatively related with mental health problems. Based on the significant bivariate correlations between the variables, the two-step approach SEM was used to examine the hypothesized models. The skewness and kurtosis found to be within the acceptance range of modulus 2 for normality. Levene test found to be non significant,  $p > 0.05$ , and indicated the homogeneity of variance. Thus, the collected data were deemed appropriate for SEM.

Figure 1 portrays the measurement model of the latent and manifest constructs of SI, EI and mental health problems. The initial hypothesized measurement model fall short from the acceptable fit statistics; therefore prudent modifications had been made. Based on the suggestions from the modification indices in AMOS output, we relaxed on the assumption of independent of error terms for the manifest constructs of Consciousness and Transcendence for SI and Interpersonal and Stress Management for EI. Then, we deleted the non-significant loading of construct Truth on SI. The modified measurement model yielded an acceptable fit  $\chi^2$  (60 df) = 141.430, GFI = 0.915, IFI = 0.914, CFI = 0.913, RMSEA < 0.074. The significant loadings ranged is  $\lambda = 0.29$  to 0.77. The inter-correlations between the latent construct showed

that SI was highly positively inter-correlated with EI ( $\theta = 0.81$ ,  $p < 0.001$ ) and highly negatively inter-correlated with mental health problems ( $\theta = -0.80$ ,  $p < 0.001$ ); and SI was moderately positively inter-correlated with mental health problems ( $\theta = -0.71$ ,  $p < 0.001$ ).

### Structural Equation Model

We hypothesized that, there was a significant direct effect between SI and mental health problems; however the findings did not support this hypothesis. Hence, as shown in Fig. 2, we deleted the path SI → MH; accordingly the modified structural equation model succeeded the threshold values for the strings of fit statistics  $\chi^2$  (61 df) = 142.503, GFI = 0.914, IFI = 0.914, CFI = 0.912, RMSEA < 0.074. Table 2 and 3 reveals the findings indicated a significant path SI → EI ( $\beta = 0.832$ ,  $p < 0.001$ ) and EI → MH ( $\beta = -0.823$ ,  $p < 0.001$ ). Hence, SI had a significant indirect effect via EI on reducing mental health problems accounted for 68 % of proportion variance explained. In short, the findings provided evidence that EI was a significant full mediator between SI and mental health problems. The significant indicators for SI were Consciousness, Grace, Meaning and Transcendence, for EI the significant indicators were Interpersonal, Adaptability, Stress Management and General Mood and for Mental Health problems were Somatic Symptoms, Anxiety, Insomnia, Social Dysfunction and Depression.

## Discussion

Generally, the results was in line with the previous literature to the contention that EI have four dimensions namely

**Table 3** Regression weights estimate (non-standardized) and standardized, standard error, critical ratio and p-values for the structural equation model

			Estimate	standardized	S.E.	C.R.	P
EQ	<—	SQ	0.705	0.832	0.115	6.105	***
MH	<—	EQ	-0.919	-0.823	0.117	-7.878	***
Meaning	<—	SQ	1.000	0.495			
Grace	<—	SQ	1.325	0.786	0.195	6.800	***
Consciousness	<—	SQ	0.793	0.404	0.167	4.755	***
Adaptability	<—	EQ	1.000	0.679			
Interpersonal	<—	EQ	0.537	0.432	0.090	5.977	***
Intrapersonal	<—	EQ	0.612	0.283	0.152	4.014	***
Somatic Symptom	<—	MH	1.000	0.664			
Anxiety	<—	MH	1.202	0.705	0.132	9.107	***
Social Dysfunction	<—	MH	0.835	0.660	0.097	8.644	***
Transcendence	<—	SQ	0.945	0.601	0.154	6.157	***
Stress Management	<—	EQ	0.910	0.515	0.129	7.050	***
General Mood	<—	EQ	1.092	0.763	0.110	9.906	***
Depression	<—	MH	1.718	0.757	0.179	9.582	***

\*\*\* < 0.001

Interpersonal, Adaptability, Stress Management and General Mood (EQ-i YV, Bar-On and Parker 2000) and significantly reduce mental health problems (Somatic Symptoms, Anxiety, Social Dysfunction and Depression), and it played a full mediational role in the associations between SI and mental health problems. SI however, had no direct effect on reducing mental health problems but indirectly via emotional intelligence. The findings partially supported the conceptualization of SI dimensions (Amram and Dryer 2008). Instead of five dimensions, only four dimensions namely Consciousness, Grace, Meaning and Transcendence found to be significant.

In other words, the findings of the study provide evidence that emotional and spiritual intelligences significantly may directly and indirectly help reduce mental health problems among Iranian adolescents. However, the cultural context, particularly belief system and faith as spirituality is very much related to religion among Muslim community (Hassan et al. 2008). The present study is limited by its relatively small sample size and only Iranian adolescent in Gorgan city to represent Muslim community. Therefore our findings should be interpreted with caution until they are replicated.

Although the results indicated that EI and SI both positively predicted mental health problems (Shabani et al. 2010, 2011) SI was only associated with mental health indirectly—via EI; the direct path from SI to mental health was not significant. In other words, EI was a full mediator between SI and mental health. This implied that, without EI, SI may not have any significant contribution on adolescents' mental health. SI, however, significantly contribute to increase EI of the adolescents and EI significantly contribute to adolescents' mental health. In this study, the instrument adopted to measure EI was based on personality rather than ability; hence, the conclusion drawn on the mediating role of EI between SI and mental health problem is somehow limited.

Future study needs to develop and test the effectiveness spiritual and emotional intelligences interventions on reducing mental health problems among adolescents. Also, longitudinal research is suggested to be undertaken.

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