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Comparing spiritual intelligence and emotional expressiveness in psychosomatic patients

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Abstract

The most important issues of psychology is psychosomatic disease. This study aimed to compare spiritual intelligence and emotional expression in patients with irritable bowel syndrome, coronary heart disease and asthma. This research was a post-event descriptive study. The statistical population included patients with coronary heart disease, irritable bowel syndrome and asthma that attended Imam Khomeini hospital, Tehran. The participants consisted of 150 participants (86 women, 64 men) with irritable bowel syndrome (n=50), coronary heart disease (n=50) and asthma (n=50). They answered King and Emmons' emotional expressiveness questionnaire and King's spiritual intelligence questionnaire. The results showed a significant relationship between spiritual intelligence and emotional expressiveness subscales and a low level of spiritual intelligence and emotional expressiveness in all three groups of patients. Comparing the three groups showed that spiritual intelligence and emotional expression were low in all of them and coronary heart disease was the lowest in three group of patient.

Keywords: Disorder, Emotional, Intelligence, Psychosomatic, Spiritual

Introduction

The relationship between mind and body has long been debated in that today most experts and scientists believe that human enjoys psychological, social and physical dimensions and all three dimensions should be considered to know human well [1]. According to the Diagnostic Statistical Manual of Mental Disorders, fifth edition, almost all physical diseases are potentially associated with stress [2]. It is used in psychosomatic disorders when a person has physical symptoms and it seems that psychological factors have been involved in their development and exacerbation, in fact, there is a permanent relationship between psychological factors and physical symptoms [3].

Irritable Bowel Syndrome (IBS) is one of the most common functional gastrointestinal disorders. Gastrointestinal functional disorders are the reason for about 50% of referrals to centers for digestive diseases [4]. Currently, the prevalence of IBS is 10% to 20% in Americans [5]. Alexithymia is more prevalent in psychosomatic disorders [6].

Gastrointestinal disorders are associated with emotion. Zboralski reported a significant relationship between emotional functions of these patients compared to the control group [7]. Coronary Heart Disease (CHD) is another common psychosomatic disorder. CHD is one of the three causes of death along with cancer and stroke [8]. In researchers' view, psychological and psychosocial factors play an important role in this disease [9]. Emotion has a critical role in psychosomatic diseases and emotional expressiveness is effective in CHD [10]. Emotional inhibition can predict the incidence of cardiovascular disorders. These people have personality traits such as anger, hostility, aggression and emotional hyper-arousal and experience more stressful events compared to healthy individuals. The inhibition of emotional expressiveness is observed in their interactions and they feel tension, insecurity and inhibition [11]. Asthma is another common psychosomatic disorder. The disease is a major health problem in most parts of the world, its diagnose and treatment are still a health problem, and a large number of patients with asthma lose their lives annually [12]. Iran's share of asthma is higher than the average in the world and in the region. According to the Iranian society of Asthma and Allergy, asthma prevalence is 5% to 15% in the country, i.e., 5-6 million people suffer from asthma in Iran [13]. Asthma is classified as a psychosomatic disease, affected by psychological factors such as stress, anxiety, depression, anger, frustration and negative emotions that function as catalysts for asthma attacks and influence the quality of life [14]. Negative emotions such as anger, aggression, anxiety, depression, social inhibition and emotional inhibition mediate the development and exacerbation of asthma [15]. Negative emotions such as anger are risk factors for asthma. Suppression of negative emotions, especially anger is observed in women with asthma [16]. Generally, levels of negative emotion have a considerable impact on the quality of life and severity of asthma [17].

Overall, emotion has a prominent role in psychosomatic disorders. Anger and aggression are the main etiologies of psychosomatic disorders [18]. Kring identified three types of emotional expressiveness: expression of positive emotion, expression of negative emotion and expression of intimacy [19]. The results of some studies show that inhibition in emotional expressiveness is associated with obsessive thoughts and ruminations, including negative self-assessments and internal attributions at the time of failure and leads to increased sympathetic activity [20]. Several studies confirm the importance of emotional expressiveness styles in different aspects of health. According to some reports, there is a relationship between emotional expression styles and several physical diseases such as coronary artery disease [21], asthma bronchitis [22] and the immune system function [23].

Studies show that spiritualism is effective on the immune system and disease management strategies and vulnerability to diseases [24,25]. According to Manshaei and Amini, spiritualism has a negative relationship with depression and negative emotion [26]. Study of Mazaheri, shows that spiritualism has a negative relationship with mental disorders in asthma [6]. Emmons believes that people with spiritual orientation better respond to treatment in case of injuries and diseases, and better cope with the disease [27]. King states that there is a high correlation between spirituality and psychological well-being and coping, but he believes that coping strategies and problem solving techniques using spirituality are in fact adaptive applications of spiritual intelligence. He suggests that this relationship is indirect and spiritual intelligence plays a mediating role in this relationship. It is more likely that there is a more significant correlation between levels of spiritual intelligence and spiritual intelligence adaptation [28]. Coyle emphasized on the essential role of religious beliefs in adoption, adaptation and change.

Positive religious beliefs help chronic patients adapt, eliminate stress or reduce stress and anxiety through shaping adaptation of patients with the disease [29]. Positive spiritual beliefs are important factors in maintaining health, adapting with the disease and improving mental health in psychosomatic patients as well as reducing secondary depression and increasing purposefulness in patients [30]. In addition, training and spiritual experience indicate emotional communications [6]. Spiritual intelligence represents a set of abilities, capacities and spiritual resources whose application in daily life can increase individual's adaptability and affect the process of thinking and decision-making. Spiritual intelligence contributes to decision-making related to mental health [31].

Because psychosomatic diseases are multidimensional, it is not possible to evaluate all factors that impact them, therefore, CHD, IBS and asthma were selected among psychosomatic disorders due to their prevalence. Based on the research background, we tried to evaluate a series of psychological factors affecting this disorder (psychosomatic disorder), and it seems that emotional expressiveness of whether positive or negative emotions, and spiritual intelligence are effective in the development or exacerbation of psychosomatic diseases; the relationship between spiritual intelligence and emotional expressiveness is also important. The distinction between this study and previous studies is the emphasis on psychological components such as spiritual intelligence and emotion expressiveness as these components have not been investigated so far in psychosomatic disorders simultaneously. The results of this research can be a preliminary basis to identify the effective factors and determine correct priorities for mental health interventions in chronic psychosomatic diseases and lead to purposive studies in the community.

Therefore, the main objective of this study was to compare spiritual intelligence and emotional expressiveness in three groups of psychosomatic diseases: CHD, IBS and asthma. In addition, the relationship between spiritual intelligence and emotional expressiveness was also investigated.

Method

This descriptive post-event study was conducted on all patients with CHD, IBS and asthma who attended the psychosomatic department of Imam Khomeini hospital, Tehran (Iran) from October 25, 2013 to December 31, 2013. Overall, 150 patients were selected by convenience sampling and were assigned into one of the three groups: asthma group with 50 participants (30 women and 20 men) aged 20-40 years old, IBS group with 50 participants (31 women and 19 men) aged 20-40 years old and CHD group with 50 participants (25 women and 25 men) aged 40-50 years old. The groups were matched for age and education level of high school diploma and place of residence (Tehran). The participants were selected according to the physicians' view in psychosomatic department of the hospital. Inclusion criteria were having high school diploma as the lowest degree of literacy, diagnosis of the mentioned diseases as psychosomatic and age over 20 years old. Exclusion criteria of the study were suffering from other physical and mental disorders affecting the results i.e. mental diseases such as mood disorders and other physical diseases and using psychiatric medications. All participants entered the study voluntarily and were briefed about the objectives of the study. Presenting to the clinic, participants were asked to answer questionnaires of spiritual intelligence and emotional expressiveness.

A. The Spiritual Intelligence Self-Report Inventory (SISRI-24) was designed by King and has 24 items evaluating abilities of spiritual intelligence in four key aspects. Mental abilities of spiritual intelligence evaluated in this scale include critical existential thinking, personal meaning production, transcendental awareness and conscious state expansion. Participants showed their level of agreement or disagreement in a 5-point Likert scale.

King and DeCicco reported Cronbach's alpha coefficient of 0.92 for the test. The reliability coefficient of the whole scale is 0.88, which shows a good reliability. The concurrent validity of the scale was reported 0.63, 0.48 and 0.46, respectively through correlation with several questionnaires of mystical experiences, religious orientation and emotional intelligence [32]. Aghababaei, Farahani and Rahiminejad reported a high correlation with religious orientation test based on Islam and spiritual self-assessment scale, which reflects the concurrent validity of the instrument [33]. In this study, reliability coefficient of the whole scale was 0.98, indicating a good reliability.

B. Emotional expressiveness questionnaire was designed by King and Emmons, and includes 16 items. This questionnaire consists of three subscales of expression of positive emotion, expression of intimacy and expression of negative emotion. It is scored based on a five-point Likert scale in which strongly agree is scored 5 and strongly disagree is scored 1. Accordingly, the total score varies from 16 to 80. A higher score indicates a higher emotional expressiveness. Evaluation of the convergent validity showed a positive correlation between the scores of emotional expressiveness questionnaire and Minnesota multidimensional personality questionnaire and the scores of Burn's positive affect scale [34]. The reliability of this scale was evaluated by internal consistency using Cronbach's alpha coefficient by Rafieenia reported as 0.68, 0.65, 0.59, 0.68 for the whole scale and sub-scales of expression of positive emotion, expression of intimacy and expression of negative emotion, respectively, which was significant at a: 0.0001 level [35]. In this study, reliability coefficient was 0.89 for the whole scale, indicating a good reliability.

Data were analyzed by correlation and one-way ANOVA tests (SPSS-18 software).

Results

According to Table 1, 50 patients with heart disease (25 men, 25 women), 50 patients with IBS (19 men and 31 women) and 50 patients with asthma (20 men and 30 women) participated in this study. The highest mean age was related to CHD, asthma and IBS, respectively, and in terms of gender, more women had IBS and asthma than men, although not significantly, but the number of women and men was equal in CHD.

Table1 *The frequency and the mean age of the participants*

Index	Sex	N	Mean (year)	SD (year)
CHD	Male	25	42.02	6.63
	Female	25		
IBS	Male	19	28. 5	6.33
	Female	31		
Asthma	Male	20	30.54	6.92
	Female	20		

Table2 *The correlation between spiritual intelligence and expressiveness*

Index expressiveness	Expressed emotion	Positive expressiveness	Intimacy expressiveness	Negative expressiveness
Spiritual intelligence	0.46**	0.52**	0.22**	0.24**
Existential critical thinking	0.44**	0.4**	0.16*	0.18*
Personal meaning production	0.44**	0.46**	0.25**	0.25**
Transcendent awareness	0.4**	0.49**	0.17*	0.17*
Expansion of consciousness	0.53**	0.55**	0.28**	0.35**

*p<0.05
**p<0.01

According to Table 2, spiritual intelligence and its subscales have a significant positive relationship with emotional expressiveness and its subscales. The highest correlation of 0.52 was found between expression of positive emotion and spiritual intelligence. Among the subscales of spiritual intelligence, there was a positive correlation of 0.55 between conscious state expansion and expression of positive emotion.

According to one-way ANOVA test, spiritual intelligence is significant given the significance level obtained (0.024), indicating significant differences in spiritual intelligence between different patients ($p<0.05$) and emotional expressiveness was significant given the significance level of 0.001, indicating significant differences in emotional expressiveness between different patients ($p<0.01$) (Table 3).

Table 3 *Compare spiritual intelligence and emotional expressiveness in CHD, IBS and Asthma*

Index	Sum Squares	Df	Mean Squares	F	Sig.
Spiritual intelligence Between Groups	3155.77	2	1577088		
Within Groups	60539	147	411.83	3.83	0.024
Total	63694.77	149			
Emotional Expressiveness Between Groups	2491.21	2	1245.61		
Within Groups	6636.98	147	45.15	27.59	0.001
Total	912819	149			

As shown in Table 4, the mean and standard deviation of spiritual intelligence were 34.66 and 17.63 for patients with CHD, 44.38 and 20.87 for patients with IBS, and 44.40 and 22.10 for patients with asthma, respectively. According to the results of LSD post-hoc test, there was a significant difference between the mean of three groups ($p<0.05$).

Table 4 *The differences between the acquisition of spiritual intelligence*

Index		M	SD	Mean Differences	Sig.
CHD	IBS	34.66	17.63	-9.72*	0.018
	Asthma			-9.74	0.018
IBS	CHD	44.38	20.87	9.72*	0.018
	Asthma			-0.02	0.996
Asthma	CHD	44.4	22.1	9.74*	0.018
	IBS			0.02	0.996

As shown in Table 5, the mean and standard deviation of emotional expressiveness were 26.00 and 5.22 for patients with CHD, 30.80 and 7.23 for patients with IBS, and 35.98 and 7.42 for patients with asthma, respectively. According to the results of LSD post-hoc test, there was a significant difference between the mean of three groups ($p<0.001$).

Table 5 *The significant differences between the acquisition of emotional expressiveness*

Index		M	SD	Mean Differendes	Sig.
CHD	IBS	26	2.55	-4.8*	0.001
	Asthma			-9.98*	0.001
IBS	CHD	30.8	7.23	4.8*	0.001
	Asthma			-5.18	0.001
Asthma	CHD	35.98	7.42	9.98*	0.001
	IBS			5.18	0.001

Discussion

This study examined the spiritual intelligence and emotional expressiveness in patients with CHD, IBS and asthma. The findings showed that there is a significant positive relationship between spiritual intelligence and emotional expressiveness, especially expression of positive emotion. This finding is consistent with that of Rippentrop that showed an internal consistency between spiritualism and health, and emotional stability and religious orientation [25]. In addition, training and spiritual experience imply emotional communications [6]. In fact, the high level of spirituality can be associated with emotional expressiveness, especially positive emotion. According to the study of Manshaei and Amini, there is a negative relationship between spiritualism and depression and negative emotion [26]. Thus, expression of positive emotion and spiritual intelligence can be associated with each other in that the higher spiritual intelligence has a negative relationship with negative mood including expression of negative emotion. In fact, emotion expressiveness leads to awareness of emotion, stress tolerance and impulse control, and spiritual intelligence is effective on decision-making, problem-solving and adaptation. Finally, it can be said that these two components are related to each other and are effective on individual's emotion control and adaptation.

Another finding showed that spiritual intelligence is significantly low in psychosomatic patients respectively with CHD, IBS and asthma. This finding is consistent with that of King who reported high interactions between spirituality and psychological well-being and adaptation. However, he believes that coping strategies and problem solving techniques using spirituality are in fact adaptive applications of spiritual intelligence. He suggests that this relationship is indirect, and spiritual intelligence plays a mediating role between these interactions. It is more likely that there is a more significant correlation between levels of spiritual intelligence and spiritual intelligence adaptation [28]. Other studies show that spiritualism is effective on the immune system and coping strategies with and vulnerability to diseases [26]. In addition, training and spiritual experience imply emotional communications [6]. Vegan believes that high spiritual intelligence is effective on mental health [31]. Furthermore, according to Emmons, people with higher spiritual intelligence can cope with diseases better and spiritual intelligence is effective on self-awareness, flexibility and patience against problems [27]. Coyle emphasized on the essential role of religious beliefs in adoption, adaptation and changes. The positive religious beliefs in chronic patients who are often subject to physical and mental stress lead to adaptation to and elimination of stress or reduction of stress and anxiety in patients by shaping adaptation of patients with such diseases [29]. Positive spiritual beliefs are important factors in maintaining health, adapting with the disease and improving mental health in psychosomatic patients and they also lead to reduction in secondary depression and increase in purposefulness in patients, so they result in favorable changes in psychosomatic patients' lifestyle [30]. Hence, there are two possible explanations. One possibility is that high spiritual intelligence will lead to using effective coping strategies and create some changes in adaptability, and also lead to changes in individuals' lifestyle. Consequently, spiritual intelligence can be inversely associated with psychosomatic diseases because these people have problems in adaptation, decision-making and problem solving, and are less flexible and do not cope well with stress and physical diseases. Another explanation is that spiritual intelligence and spiritualism can be effective on health, emotional stability and mental health and stress reduction and reduce negative mood and depression due to disease, therefore, they can be an obstacle to the development or exacerbation of psychosomatic diseases. So, the low spiritual intelligence in these patients suggests that they cannot use effective coping

strategies against stress and do not achieve necessary adaptation and cannot control their stress and emotions due to their disease, so they feel less healthy. Another finding showed that poor emotional expressiveness in these patients is observed respectively in patients with CHD, IBS and asthma. This finding is based on a research which shows the role of emotion in this disorder [11,12]. In addition, emotional inhibition can predict the incidence of cardiovascular disorders [13]. Negative emotion and emotional inhibition are powerful predictors for palpitation [9]. In cardiovascular diseases, emotions and their expression or repression are psychological factors affecting the development or exacerbation of CHD. Studies show that negative emotions increase sympathetic activity of cardiovascular system [10]. The study of Zboralski showed that there is a significant relationship between emotional functions of these patients compared to the control group. Alexithymia is another problem in patients with gastrointestinal disorders and IBS. There is a positive correlation between alexithymia and severity of gastrointestinal symptoms in patients with functional gastrointestinal disorders [7]. Empirical studies show that there is a relationship between alexithymia and physical symptoms of psychosomatic disorders such as IBS. States such as stress, anxiety, depression, anger, frustration and negative emotions are as catalysts for asthma attacks and affect the quality of life [14]. As a result, low emotional expressiveness in these patients can be effective in the severity of symptoms, and in turn, it affects the quality of life in these patients, as emotional expressiveness is effective on health and immune system. Meanwhile, the lack of emotional expressiveness can sustain the disease and lead to negative attributions and negative self-evaluations that finally affect the chronicity of the disease. In fact, when people have more emotional expressiveness and better control, they can control their emotional reactions and cope with stress effectively, so they can remain safe from possible damages caused by stress. Conversely, the lack of emotional expressiveness can lead a person to show unhealthy reactions, so that psychosomatic diseases will be developed or exacerbated.

In addition, the lack of emotional expressiveness, whether positive or negative emotions, can cause increased symptoms and suppressing negative emotions and inhibition of emotional expressiveness play an important role in psychosomatic patients.

Each study might have some limitations. One of the main limitations in this study was shortage of time and the data were collected in a short time. The small sample size and convenience sampling method were other limitations that make it difficult to generalize the findings. Conducting such studies needs more time, even the longitudinal study, larger sample size and random sampling so that there would be less error in generalization and judjment.

Conclusion

The findings showed that there is a relationship between spiritual intelligence and emotional expressiveness, particularly expression of positive emotion. In addition, spiritual intelligence and emotional expressiveness are low in all three groups that can be effective in the development and exacerbation of their symptoms. The findings can be useful in investigating the effective causes in psychosomatic disorders and planning for treatment of these patients and the role of psychological and emotional factors in the development and exacerbation in these diseases. It is suggested that this study be conducted in other groups of psychosomatic diseases.

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Contribution

Study design: MN, FSA
Data collection and analysis: MN
Manuscript preparation and edition: MN, FSA

Conflict of Interest

"The authors declare that they have no competing interests."

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