



The Relationship Between Spiritual Intelligence and Emotional Intelligence in Patients with Type 2 Diabetes

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Abstract

Background: Diabetes mellitus is a chronic, destructive metabolic disease. One of the factors that can affect the mental and physical health of diabetic patients is spiritual intelligence and emotional intelligence.

Objectives: This study aimed to investigate the relationship between spiritual intelligence and emotional intelligence in patients with type 2 diabetes.

Methods: This descriptive - correlational study was performed on 100 patients with type 2 diabetes who referred to the Kermanshah Diabetes Research Center and selected by the convenient sampling method. In order to determine the spiritual intelligence in diabetic patients, the King's Spiritual Intelligence was used while Petrides & Furnham Inventory of Emotional Intelligence was applied to evaluate emotional intelligence. In order to analyze the data, SPSS version 22 was used.

Results: The mean age of the patients was 39.97 ± 11.8 . The mean score of spiritual intelligence was 52.10 ± 18.05 and the mean score of emotional intelligence was 127.62 ± 23.88 . The results showed that there was a positive significant difference between spiritual intelligence and emotional intelligence and its subscales in patients with type 2 diabetes ($P > 0.001$).

Conclusions: It can be concluded that spiritual intelligence and emotional intelligence can complement each other in order to increase diabetes self - management and adaptive mechanisms in patients. The more the patient is against wrong behaviors of others and trusts in God for his/her tasks, the better the individual can manage his/her daily activities in life and provide a context for emotional intelligence development.

Keywords: Spiritual Intelligence, Emotional Intelligence, Type 2 Diabetes

1. Background

Diabetes mellitus is a chronic and malignant metabolic disease that causes multiple - organ involvement, as well as pain, stress, reduced quality of life, disability, and death (1). The prevalence of diabetes worldwide is approaching epidemic proportions, with more than 300 million individuals worldwide now having diabetes (2). In 2015, in Iran, there were more than 4.5 million cases of diabetes at the age of 20 - 79, and it is anticipated that by the year 2030, the number of diabetic patients will reach more than six million people. Annually, 4 million deaths occur due to diabetes (3). Type 2 diabetes is one of the most common types of diabetes accounting for 90% of diabetic patients (4).

The disease may cause spirituality expression and in-

crease spiritual support as a coping mechanism (5). Spirituality and religion are among the most important factors that play a significant role in dealing with emotional problems and support (6). Emons (2000) considers the emergence of the construct of spiritual intelligence as the application of spiritual capacities and resources in practical contexts and situations. In other words, individuals apply spiritual intelligence when they want to use spiritual capacities and resources to make critical decisions and think about existential subjects or try to solve a daily problem (7).

To achieve a happy life with physical and mental health, spiritual intelligence and emotional intelligence are correlative. Recent studies have shown that psychological interventions increase the motivation to implement self - care behaviors. According to some researchers, one

of the psychological interventions that are effective in improving the quality of life of people with diabetes is to increase emotional intelligence in individuals (8). Tavan et al. (2015) state enhancing spiritual intelligence improves emotional intelligence (9).

Emotional intelligence (EI) is a concept that describes human potentials and allows individuals to identify feelings, integrate feelings into reasoning processes, understand empirical situations and complex emotional situations, and set emotional responses (10). The term "emotional intelligence" was first raised by two psychologists, John Mayer and Peter Salovey, in the 1990s (11). They stated that those with emotional intelligence can control their emotions and others, distinguish between positive and negative emotional outcomes, and use emotional information to guide the process of thought and personal actions (12).

Emotional intelligence, in addition to the direct effect on the health, acts as an intermediary between the personality and health (13). Geula et al. (2004) conducted research on emotional and spiritual intelligence and concluding that emotional intelligence and spiritual development are required to achieve the overall goal of life (14). The weakness in emotional intelligence can cause a person to experience negative emotions and be at risk for a variety of disorders (15). Since emotional complications and mental stress play an important role in controlling blood sugar in diabetes and these factors can affect the quality of life of type 2 diabetes, any factor that more efficiently manages the mental stress of patients' lives can have a positive effect on the quality of life of these patients. Emotional intelligence and spiritual intelligence are supposed to be effective in improving self-care abilities and diabetes control, and patients with higher emotional and spiritual intelligence will have an improved quality of life. Research done in this area around the world is limited. Therefore, this study aimed to investigate the relationship between spiritual intelligence and emotional intelligence in patients with type 2 diabetes.

2. Methods

This was a descriptive - correlational study. The research population included patients with type 2 diabetes referring to the Kermanshah Diabetes Research Center selected through convenient sampling and after obtaining informed consent. In this study, 100 patients with type 2 diabetes were selected by simple random sampling method and according to the statistical expert's discretion. The criteria for entering the study for patients were as follows: suffering from type 2 diabetes, having a minimum of six

grades, age 25 - 60, and at least one year of diabetes diagnosis. Patients were supposed not to afflict with known diseases such as Alzheimer, depression, schizophrenia, multiple sclerosis, and anxiety disorders. The criteria for withdrawal included reluctance to participate in the study, incomplete questionnaire, and not having conditions stated in the inclusion criteria.

After completing the demographic data of patients, the King's Spiritual Intelligence Questionnaire was administered. The King's Spiritual Intelligence Questionnaire was designed by King in 2008 (16). The questionnaire has 24 items and four subscales. The subscales of this questionnaire include critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion. The higher the individual score in this questionnaire, the more the spiritual intelligence. Each item of this questionnaire is scored based on a five-point Likert scale: not at all true of me, not very true of me, somewhat true of me, completely true of me, very true of me. Finally, a person obtains a score ranging from 0 to 96.

To calculate the score of every dimension, the scores of the questions in the dimension were summed together. In the end, the scores were divided into four groups: the first group, low score (0 - 24), the second group, moderate score (25 - 48), the third group, high score (49 - 64), and the fourth group, very high score (65 - 96). The spiritual intelligence questionnaire was designed by King and Desico (2009) with Cronbach's alpha coefficient of 0.92 while Aghababaei et al. measured Cronbach's alpha coefficient of 0.88. Esmaeilpour et al. (2011) confirmed the validity and reliability of the questionnaire with Cronbach's alpha coefficient of 0.88 (17). The face and content validity of the scale was confirmed by psychologists. In this study, Cronbach's alpha coefficient was calculated as 0.91.

In addition, to assess the emotional intelligence of patients, the Petrides and Furnham Emotional Intelligence inventory was used. The Inventory is a self-report scale (18). The main and original form has 144 items and 15 subscales of Adaptability, Assertiveness, Emotion perception, Emotion expression, Emotion management, Emotion regulation, Impulsiveness, Relationships, Self-esteem, Self-motivation, Social awareness, Stress management, Empathy, Happiness, and Optimism. The form used in the present study consisted of 30 items, which are scored on a seven-point scale from strongly agree (1) to strongly disagree (5). The minimum score is 30 and the maximum is 210. When the score is between 30 and 60, emotional intelligence is weak, between 60 and 90, emotional intelligence is moderate, and above 90, emotional intelligence is strong.

Its construct validity was evaluated by its developers and its single factor model was confirmed by the exploratory factor analysis. The internal consistency coefficient

cient with the Cronbach's alpha method in the prototype with 102 individuals has been reported as 0.86 (9). In this study, the Cronbach's alpha coefficient was calculated as 0.88. In order to analyze data, SPSS version 22 was used. The significance level for the tests was 0.05. It should be mentioned that this study was approved by the Research Council and the Ethics Committee of Kermanshah University Of Medical Sciences, Kermanshah , Iran (IR. KUMS. REC .1397.167).

3. Results

Demographic data of the patients are presented in [Table 1](#). In this study, the mean age of the patients was 39.97 ± 11.8 . 5% of the patients had low spiritual intelligence, 34% had moderate spiritual intelligence, 35% had high spiritual intelligence, and 26% had very high spiritual intelligence. In addition, 89% of the patients had high emotional intelligence. The mean scores of spiritual intelligence and emotional intelligence in patients with diabetes are summarized in [Table 2](#).

The study showed that there is a significant relationship between spiritual intelligence and emotional intelligence in patients with type 2 diabetes ($P = 0.001$). In addition, no significant relationship was found between gender and spiritual intelligence score ($P = 0.369$) and emotional intelligence score ($P = 0.495$). The results showed that there was no significant relationship between marital status and spiritual intelligence score ($P = 0.889$), but there was a significant relationship between marital status and emotional intelligence score ($P = 0.014$). In addition, no significant relationship was found between job and spiritual intelligence score ($P = 0.634$) and emotional intelligence score ($P = 0.934$). There was no significant relationship between the level of education and spiritual intelligence score ($P = 0.559$) and emotional intelligence score ($P = 0.226$). The relationship between the patients' spiritual intelligence subscales and emotional intelligence subscales is shown in [Table 3](#).

According to the above table, there is a significant relationship between all spiritual intelligence subscales and emotional intelligence subscales.

4. Discussion

The results of this study, which was conducted to determine the relationship between spiritual intelligence and emotional intelligence in diabetic patients referring to the diabetes association affiliated to Shiraz University of Medical Sciences, showed that 76% women and 23% men were present and 77% of them were married. 55% were housewives and 38% of the patients had bachelor degrees.

Table 1. Demographic Data of Patients with Diabetes

Parameters	Percent
Education	
Illiterate	8
Under the diploma	23
Diploma	27
BSc	38
MSc	4
Job	
Unemployed	7
Employee	21
Housewife	55
Student	10
Manual worker	7
Others	1
Marital status	
Single	23
Married	77
Sex	
Female	76
Male	24

The mean score of the patients' spiritual intelligence was 52.10 showing a high level of spiritual intelligence in the patients. The mean score of emotional intelligence in patients was 127.62 showing the high spiritual intelligence of patients. In a study by Arabi et al. with the aim of assessing the quality of life of the elderly with diabetes and its association with emotional intelligence, it was found that patients have moderate to high emotional intelligence. Arabi says that people with higher emotional intelligence are less likely to suffer from physical and psychological disorders and have a higher level of health compared to others (19).

Therefore, when the mental status of these patients is stable, other physical conditions, as well as coping mechanisms, improve in them. In the present study, there was a positive significant relationship between spiritual intelligence and emotional intelligence in patients with Type II diabetes, as well as all subscales of spiritual intelligence and subscales of emotional intelligence.

Therefore, the four aspects of emotional intelligence in the patients are influenced by the four aspects of spiritual intelligence and the more developed the four aspects, the more possible the behaviors such as consciousness, perception, optimism, and social skills. In this regard, in the study of Tavan et al., it was found that there is a significant

Table 2. Mean Scores of Spiritual Intelligence and Emotional Intelligence in Patients with Diabetes

Variable	Minimum Score	Maximum Score	Average	Standard Deviation
Spiritual intelligence	3	89	52.1	18.05
Emotional intelligence	30	200	127.62	23.88

relationship between spiritual intelligence and emotional intelligence so that the enhancement of spiritual intelligence improves emotional intelligence (9).

Therefore, there is an interactive relationship between spiritual intelligence and emotional intelligence and spiritual intelligence helps to grow, enrich, and enhance the emotional intelligence. One of the spiritual dimensions is the knowledge and insight of individuals towards oneself and people set their emotions with this insight (20, 21). On the other hand, as long as people are not at a high level of emotional intelligence, they cannot have the features of forgiveness, honesty, etc. Religion prevents negative perceptions in life, suggests suitable coping strategies, and provides specific strategies for coping with problems and maintaining mental health and well-being (22). The results also showed that there is no significant relationship between gender, marital status, and occupation and education level and spiritual intelligence score. In Ismailpour et al. study (2011), it was found that there was no significant relationship between spiritual intelligence and gender, age, and occupation. Nevertheless, there was a significant relationship between spiritual intelligence and the level of education of the subjects (17).

In the present study, there was a significant relationship between marital status and emotional intelligence score, but there was no significant relationship between occupation, education level, and emotional intelligence score. Arabi et al. (1395) found that there was a significant relationship between emotional intelligence and education level of the elderly with diabetes. In addition, no significant relationship was found between the elderly's emotional intelligence, the age group, and economic status of individuals (19).

Considering the significant relationship between spiritual intelligence and emotional intelligence in patients with type 2 diabetes, it can be concluded that spiritual intelligence and emotional intelligence can complement each other in order to increase diabetes self-management and adaptive mechanisms in patients. The more the patient is against wrong behaviors of others and trusts in God for his/her tasks, the better the individual can manage his/her daily activities in life and provide a context for emotional intelligence development.

4.1. Conclusion

Most studies on spirituality and diabetes focus on populations with high spiritual beliefs. Thus, it is suggested conducting studies on patients with a wide range of beliefs and at different regions of the city. This study was conducted cross-sectionally. Therefore, it makes the conclusion about causation difficult. The results of this study can be generalized to patients with type 2 diabetes although it is recommended that a similar study be done with a larger sample size and, if necessary, the results of this study be generalized to other chronic patients with caution and sufficient knowledge.

4.2. Limitations

This research was done cross-sectionally. For this reason, it makes the conclusion about causation difficult. The results of this study can be generalized to patients with type 2 diabetes although it is recommended to do a similar study with a larger sample size and if necessary, generalize the results of this study to other chronic patients with caution and sufficient knowledge.

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Table 3. The Relationship Between the Patients' Spiritual Intelligence Subscales and emotional Intelligence Subscales

	Critical Existential Thinking	Personal Meaning Production	Transcendental Awareness	Conscious State Expansion	Optimism	Self-Awareness	Perception	Social Skills
Critical existential thinking								
Pearson correlation	1	0.569	0.074	0.503	0.322	0.511	0.418	0.276
Sig. (2-tailed)		0.000	0.000	0.000	0.003	0.003	0.001	0.002
Personal meaning production								
Pearson correlation	0.569	1	0.812	0.554	0.287	0.359	0.436	0.255
Sig. (2-tailed)	0.000		0.001	0.003	0.001	0.000	0.000	0.004
Transcendental awareness								
Pearson correlation	0.074	0.812	1	0.337	0.238	0.306	0.371	0.231
Sig. (2-tailed)	0.000	0.001		0.005	0.007	0.000	0.000	0.008
Conscious state expansion								
Pearson correlation	0.503	0.554	0.337	1	0.256	0.319	0.387	0.216
Sig. (2-tailed)	0.000	0.003	0.005		0.002	0.002	0.000	0.001
Optimism								
Pearson correlation	0.322	0.287	0.238	0.256	1	0.445	0.554	0.345
Sig. (2-tailed)	0.003	0.001	0.007	0.002		0.000	0.000	0.000
Self-awareness								
Pearson correlation	0.511	0.359	0.306	0.319	0.445	1	0.766	0.653
Sig. (2-tailed)	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Perception								
Pearson correlation	0.418	0.436	0.371	0.387	0.554	0.766	1	0.532
Sig. (2-tailed)	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Social skills								
Pearson correlation	0.216	0.255	0.231	0.276	0.345	0.653	0.532	1
Sig. (2-tailed)	0.001	0.004	0.008	0.002	0.000	0.000	0.000	0.000