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# Spiritual intelligence of adolescents with diabetes based on demographic components

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## Abstract:

**INTRODUCTION:** Spiritual intelligence is better defined as a capacity to discover and develop true meaning, deep purpose, and vision in life. The purpose of the present study was to determine the predictive role of demographic variables affecting the overall spiritual intelligence in diabetic adolescents.

**METHODS:** In 2016, a cross-sectional study was conducted involving 200 adolescents with type 1 diabetes referring to the Iranian Diabetes Association consenting to participate. The inclusion criteria were: age ranging from 15 to 21 years, more than a year since last diagnosed with diabetes, patients' full awareness of their disease, not having other physical-psychological illnesses, and not taking any psychiatric or narcotic drugs. Spiritual intelligence was measured using the Spiritual Intelligence Self Report Inventory questionnaire consisting of 24-questions. The alpha Cronbach's method was applied to validate the questionnaire in terms of content, form, and data with the reliability calculated as 0.903. Demographic data were analyzed using SPSS software version 18.

**RESULTS:** On total, 56% of the participants were female,  $17.10 \pm 1.85$ , and the mean duration of diabetes was  $5.98\% \pm 3.79\%$ , 62.5% reported diabetes history among immediate relatives. Forty-two percent of the participants were the oldest child in the family first children of the family and 29.5% were studying at the university. The mean score of spiritual intelligence was 60.42. A regression test using the enter method (ANOVA: 0.703, F: 0.739) showed that none of the demographic components explored did not significantly alter the scores that assessed spiritual intelligence.

**CONCLUSION:** The outcome of the current study portrayed that demographic features do not necessarily alter the overall spiritual intelligence scores, thereby not necessarily affecting an individual's overall spirituality.

## Keywords:

And adolescent, diabetes mellitus, spiritual intelligence

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## Introduction

Intelligence is introduced as "the ability to manage cognitive problems." Among the many researchers who provide different definitions of intelligence, Howard Gardner introduced the eight-element intelligence theory in 1983. In the academic literature of psychology of the world, spiritual intelligence was first introduced by Stevens

in 1996 and developed by Emmons in 1999. The concept of spiritual intelligence is among one of the nine types of intelligence. Emmons identified spiritual intelligence as "a human capacity that a person, using spiritual resources and its adaptive application, can to take advantage of them to solve daily problems and achieve goals."<sup>[1]</sup> Although different definitions of spiritual intelligence are expressed, in all definitions, the adaptive action of spiritual intelligence with everyday problems of life,

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finding purpose and meaning in life, transcendental consciousness, and the capacity to move beyond the boundaries of knowledge with emphasis on spirituality have been highlighted.<sup>[2]</sup>

Adolescence is a special period of life that entails crises and challenges in and by itself. Adolescents with diabetes have to take treatment measures every day in order to control their disease and have a number of decisions to make and problems to solve.<sup>[3]</sup> Concern over adolescent mental health has led some researchers to examine protective factors that may help mitigate the difficulties some youth deal with during this developmental period. Given the many psychological pressures that a person experiences during adolescence, certain coping mechanisms are needed to adapt and adapt to critical situations. Regarding the onset of spiritual evolution during adolescence as one of the components of mental health improvement, using spiritual capacities with regard to the characteristics of solving the problem of spiritual intelligence in people with chronic diseases may be an effective factor for improving mental health in adolescents. Spirituality is considered as one of the factors contributing to the improvement of cognitive development and mental health of adolescents.<sup>[4]</sup> Spirituality is recognized as an abstract experience that leads to human excellence and to the attachment to a supernatural being beyond and to increase communication with others.<sup>[5]</sup> Consequently, spirituality can enhance healing, result in better mental health and provides a sense of well-being with suitable adaptive strategies. According to what Maslow (1999) suggests, spiritual experiences are used as a mechanism to acquire problem-solving skills and understand the meaning of life.<sup>[6]</sup>

Wigglesworth has defined spiritual intelligence as the ability to behave with compassion and wisdom while being calm internally and externally neglecting the accidents and events. Neglecting accidents, in other words, means that with a peaceful spiritual mindset, we can survive and withstand even the greatest burdens and pressures in life with ease. This characteristic is seen in spiritual leaders.<sup>[7]</sup> Interest in adolescent spirituality has spiked dramatically in the last decade with the introduction of the field of Positive Youth Development, which focuses on strengths-based programming, research, and support that encourages youth to live responsible, meaningful life with a sense of higher purpose.<sup>[4]</sup> Previous studies in the field of spirituality in adolescents show that there exists a positive correlation with spiritual beliefs, mental health, healthy hygienic behaviors, life expectancy, and self-esteem.<sup>[8,9]</sup> Hence, spiritual beliefs and possibly spiritual intelligence can play a special role in helping to cope with chronic diseases. Spiritual beliefs and possibly spiritual

intelligence can play a special role in adapting to the disease. A study conducted on the African-American population showed that there was a positive relationship between spirituality, feeling good, glycemic control, and adaptation to illness and self-management, and that clients took advantage of spirituality as a way to cope with illness, get meaning and purpose in life, and manage the illness properly.<sup>[8]</sup> However, studies are scarce in the literature assessing the spirituality and the demographic aspects affecting spiritual intelligence in adolescents coping with chronic disease in other diverse cultures, especially in the Iranian Muslim community.<sup>[6]</sup> Adolescence is a critical and constructive period of human evolution; when quick physical, psychological, social, and spiritual changes take place in the individual.<sup>[3,10]</sup> Spiritual intelligence is triggered by abstract thinking at adolescence.<sup>[11]</sup> After this period, changing behavioral, emotional, and existential patterns is difficult.<sup>[12]</sup> Studying in the field of the spirituality of adolescents shows that there is a positive relationship among spiritual beliefs, mental health, having healthy hygienic behaviors, life expectancy, and self-esteem in adolescents.<sup>[8,9]</sup> The onset of spiritualism in adolescents is associated with the formation of abstract thinking.<sup>[11]</sup> The beginning of the formation of ontological questions should be considered from the middle and end of the adolescence period. These questions have a higher frequency among adolescents with chronic diseases, such as diabetes. Due to emotional changes caused by the illness, an adolescent suffering from this illness encounters with existential and semantic questions: "Why me?," "Is my disease a punishment from God," "O God, can you help me tolerate this pain?" Given the many psychological pressures that a person faces during this period, certain coping mechanisms are needed to adapt to and get along with critical situations.<sup>[9,11]</sup> Bearing in mind the fact that adolescence is the key phase which molds a person's overall mentality, using spiritual capacities to solve the spiritual conflicts faced by individuals with chronic disease is regarded as very effective. Individual demographic characteristics such as age, gender, educational level, and socioeconomic status of the family may play an important role in shaping the structure of spiritual intelligence. Nohi *et al.*, in a study, pointed to a tendency toward spirituality and age. In the aforementioned study, he also sought to answer the question that whether women are more in search of spirituality than men.<sup>[13]</sup> Considering the onset of spiritual evolution during adolescence, the use of spiritual capacity in people with chronic diseases can be a factor in improving mental health, especially among adolescents with type 1 diabetes. Adolescents with diabetes have difficulty controlling their blood sugar and managing their illness and may not be able to manage the disease alone. Understanding the spiritual aspect of human beings is very important in

nursing. Since nursing is a functional discipline that deals with people, and undoubtedly, the inclusion of spirituality in care is essential. Hence, doing such studies, considering the challenges of managing type 1 diabetes among adolescents, can reveal a new perspective of science.<sup>[3,6]</sup> Although spirituality is one of the psychosocial characteristics of individuals, it has found a special status among chronic patients. Therefore, to control the blood sugar of patients with diabetes, paying attention to spirituality in their caregiving program is of particular importance.<sup>[4]</sup> However, it should be found out whether demographic characteristics can predict spiritual intelligence. Therefore, the present study was conducted to determine the predictive role of demographic variables in spiritual intelligence in adolescents with type 1 diabetes.

Interest in adolescent spirituality has spiked dramatically in the last decade with the introduction of the field of Positive Youth Development, which focuses on strengths-based programming, research, and support that encourages youth to live a responsible, meaningful life with a sense of higher purpose.<sup>[4]</sup>

### Methods

This cross-sectional study was conducted, by simple sampling, on adolescents with type 1 diabetes referring to the Iranian Diabetes Association in 2016. The sample size of this study was 172 ( $e = 2, \alpha = 0.05$ ) and the estimated loss of 200 was predicted. Inclusion criteria were: age range from 15 to 21 years, diagnosis of diabetes for more than a year, complete knowledge of the patient regarding his disease, not having other physical-psychological illnesses, and not taking psychiatric or narcotic drugs. To determine the spiritual intelligence score of adolescents with type 1 diabetes, the 24-question Spiritual Intelligence Self Report Inventory questionnaire which was designed in four subscales of “critical existential thinking, production of personal meaning, transcendental consciousness, and consciousness expansion” was used. The spiritual intelligence questionnaire score was 0–96. The respondents’ response was measured on a 5-point Likert scale (0–4). In this way, the samples chose one of the following choices: completely false (Score 0), false (Score 1), to some extent correct (Score 2), right (Score 3), and completely correct (Score 4), in response to each question. However, this method of scoring is reverse for Question 6. The content and form validity of the questionnaire was obtained with the help of five professors, and its reliability was calculated 0.903 with the help of ten adolescents using Cronbach’s alpha method. The analyzed demographic data included age, sex, degree of education, socioeconomic status of the family and family history, parental education, parental occupation, birth rank, and the duration of suffering

from diabetes. Data were analyzed using descriptive statistics (relative frequency-mean and standard deviation) and statistical test regression test in SPSS-IBM software version 18 (which was made at the University of Chicago, IL, USA).

### Results

In total, 56% of the participants were female, the mean age of the samples was  $17.10 \pm 1.85$ , and the mean duration of diabetes was  $5.98\% \pm 3.79\%$ , 62.5% reported diabetes history among immediate relatives. Forty-two percent were the first children of the family, and 29.5% were studying at the university. Fifty-four percent were weak in terms of the economic situation. Nearly half of the teenage fathers and mothers were graduated with diplomas. The mean score of spiritual intelligence was  $60.42 \pm 12.9$  [Table 1]. The multivariable linear regression test using the enter method (ANOVA: 0.703, F: 0.739) showed that none of the examined variables could predict the amount of changes in the score of spiritual intelligence [Table 2 and 3]. The Kolmogorov–Smirnov test was performed (Power Eta: 0.23) [Table 4].

### Discussion

In this study, none of the demographic variables were able to predict adequate changes in the score of spiritual intelligence. The results of this study were consistent with the results of previous studies conducted in Iran. The study led by Bagheri *et al.* (2011), using a descriptive-analytic method with random sampling, entitled “investigating the relationship between spiritual intelligence and happiness in nurses using via Naseri Spiritual Intelligence Questionnaire” on 125 nurses in two hospitals in Bushehr city, showed that there was no statistically significant relationship between the mean score of nurses’ spiritual intelligence and age,

**Table 1: ANOVA<sup>b</sup>**

Model	Sum of squares	df	Mean square	F	Significant
Regression	3.939	10	0.394	1.100	0.364 <sup>a</sup>
Residual	66.935	187	0.358		
Total	70.874	197			

a: Predictors; b: Dependent Variables

**Table 2: Model summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE of the estimate
1	0.058 <sup>a</sup>	0.003	-0.002	0.47475

SE: Standard error. a: Predictors

**Table 3: ANOVA<sup>b</sup>**

Model	Sum of squares	df	Mean square	F	Significant
Regression	0.153	1	0.153	0.680	0.411 <sup>a</sup>
Residual	44.627	198	0.225		
Total	44.780	199			

<sup>a</sup>Predictors: Constant, <sup>b</sup>Dependent variable

**Table 4: Coefficients<sup>a</sup>**

Model	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	SE	$\beta$		
Constant	4.107	0.968		4.243	0.000
Mother job	-0.001	0.038	-0.003	-0.034	0.973
Education	0.195	0.174	0.247	1.122	0.263
Age	-0.060	0.071	-0.183	-0.839	0.403
Economic level	0.043	0.069	0.048	0.622	0.535
Birthday rating	-0.027	0.038	-0.051	-0.709	0.479
History of disease	-0.089	0.090	-0.072	-0.978	0.329
Duration of disease	-0.026	0.012	-0.165	-2.138	0.034
Father education level	-0.081	0.075	-0.096	-1.084	0.280
Father education level	0.052	0.083	0.058	0.625	0.533
Father job	-0.046	0.036	-0.099	-1.283	0.201

<sup>a</sup>Dependent variable: Spiritual intelligence. SE: Standard error

sex, occupation, and education level.<sup>[14]</sup> Furthermore, in the study of Raghil *et al.* (2008), titled on the analysis of spiritual intelligence in students of Isfahan University and its relationship with demographic features, "depicted no change in difference in the spiritual intelligence associated with gender nor different educational levels. Researchers of this study state that the reason for this may be the heterogeneity in age groups and education."<sup>[15]</sup> In a descriptive-analytic study, Abdollahzadeh *et al.* (2015), entitled "the relationship of spiritual intelligence with resiliency in cancer patients," that was performed on 100 patients with cancer in Birjand using the Badiie Spiritual Intelligence Questionnaire, the results indicated that there was no significant difference between spiritual intelligence in men and women, age and educational level with the mean score of spiritual intelligence.<sup>[16]</sup> In general, it can be said that the lack of a meaningful relationship between the demographic variables and the spiritual intelligence variable in the present study can be due to the type of used instrument and to the cultural and social differences in the studied society and due to the nonhomogeneity of the research community in terms of age, economic status, and education level with other studies. The adolescents are the beginning of the formation and development of abstract thinking; the beginning of thinking about complex issues such as the value and meaning of life, the feeling of bonding with a superior being, self-awareness, and understanding of its place in the natural world, all of which is a component of spiritual intelligence, is also at an early stage. Therefore, in this period of life, spiritual intelligence has less depth and complexity than other stages of life.<sup>[1]</sup>

The result of this study is not consistent with the results of the study of Yang. In his study by distributing the 49-question questionnaire whose response method was a 4-scale Likert (Wolman, 2001) among 299 nurses that were selected randomly, he examined the relationship between the spiritual intelligence of nurses with demographic variables. He considered six demographic factors in nurses:

age, marital status, religious beliefs, level of education, job position, and work record. Significant relationships with spiritual intelligence were reported in people with spiritual beliefs, those over 40 years old and those with over 10 years of work experience ( $P < 0.001$ ). Yang, quoting Wolman, explains this finding as follows: as the age and work experience increase, spiritual experiences have a significant role in shaping and increasing the average score of nurses' spiritual intelligence.<sup>[17]</sup> Sajadinezhad and Akbari Chermahini (2016) conducted a study entitled "A Study of the Evolution of Spiritual Intelligence from Adolescence to Old Age." A cluster sampling was conducted in which 740 adults from the city of Arak entered the study in 5 age groups (14–19), (20–29), (30–39), (40–49) (over 50 years). Participants answered Sohrabi and Nasseri's Spiritual Intelligence Questionnaire (2012) in their study. The difference in the scores of spiritual intelligence between married and single groups as well as between different educational levels was significant ( $P < 0.001$ ). Sajadinezhad and Akbari Chermahini point out: "it seems that married people look at life with more sophistication and more thoughtfulness; this leads to more inquiries into the meaning and purpose of life in them. In justifying the difference between the score of spiritual intelligence and its meaningful relationship with different levels of education, spiritual intelligence is, in any case, a type of intelligence and is related to cognitive intelligence; cognitive intelligence is known as the foundation of spiritual intelligence; therefore, it is natural to increase the spiritual intelligence of individuals by increasing their education."<sup>[18]</sup>

### Ethical considerations

Ethical considerations of research include: This article is the result of the Master's thesis of pediatric nursing of Iran University of Medical Sciences with the following code: 9311687004. 1395. IR.IUMS.REC. The researcher after was introducing to the Association of Iranian Diabetes and units and explaining the purpose of research and obtaining written consent from parents and adolescents using the name of the Iran University



of Medical Sciences to head the Association of Diabetes and obtaining permission from them. All participants were assured that, following all ethics, the actual results of the research would be published.

## Conclusion

Teenagers with chronic illnesses experience more emotional instability and behavioral changes compared to healthy teens of their age. These teenagers have a low quality of life, experience mental trauma with disease progression, and their mortality rates are high. Spiritual beliefs play a special role in adaptive strategies. Adolescents possessing different demographic characteristics and with various chronic diseases try to use spiritual beliefs to adapt to and get along with the disease. Skills and attributes that are related to the spiritual intelligence of individuals vary from person to person on the basis of personality traits, spiritual orientations, spiritual contexts, and activities that they follow. The lack of prediction and impact of demographic characteristics with the mean score of spiritual intelligence in various studies emphasize that an individual's spiritual intelligence is not definitely affected by certain demographic features. In most studies that have been conducted with different groups and in different communities, they have not been able to define a meaningful correlation. On the other hand, considering that the surge in spiritual evolution in man is at adolescence, the lack of unpredictable specific of demographic qualities affecting the overall mean score of spiritual intelligence may be due to the lack of development of abstract thinking and not contemplating well enough over spiritual issues and ultimately, this totally depends on a person's pace at reaching spiritual maturity. Hence, this obviates the need for further research to be carried out in the future to predict the factors influencing spiritual intelligence in adolescents.

## Research limitations

Of the limitations of this study is that no similar study with the same title in adolescence around the world was found. Considering the fact that this study was conducted in the Iranian Association for Diabetes and that those who referred to this center usually had an average economic level, the results of this study cannot be generalized to those of governmental centers.

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## Conflicts of interest

There are no conflicts of interest.

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