

## Perceived stress and its relationship with spiritual health in patients with diabetes in the city of Urmia, Iran

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### ABSTRACT

Psychological factors not only affect quality of life but also often determine the result of dealing with a chronic illness can play an important role. According to the paradox results in the field of the relationship between mental health and spiritual health and limited studies about perceived stress and its relationship with spiritual health of patients with diabetes, the aim of this study was to investigate the relationship between perceived stress and spiritual health of patients with diabetes in the city of Urmia. This cross-sectional study (descriptive - analytical) conducted with 330 patients with type 2 diabetes in rural health centers by random cluster sampling. Perceived Stress and spiritual health questionnaire was used to collect information. Data using descriptive statistics and independent t-test, ANOVA and Pearson correlation coefficient were analyzed in SPSS v.21 software. The results of this study showed that the majority of the patients' perceived stress (70.9%) were in low level and the perceived stress mean of them were in the low level ( $7.6 \pm 24.22$ ) too. In terms of the level of the spiritual health, all patients were in medium

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to high and mean score of spiritual health were in moderate level ( $95.6 \pm 14.2$ ). There was statistically significant and reverse relationship between perceived stress and spiritual health and its dimensions using Pearson correlation test ( $p = 0.001, r = -0.48$ ). According to the results of this present study, it is suggested to develop programs and approaches to improve the spiritual health of patients with diabetes in order to improve their quality of life.

**KEY WORDS:** DIABETES, PERCEIVED STRESS, SPIRITUAL HEALTH

## INTRODUCTION

According to the World Health Organization (WHO) in 1947 Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (Butler, 1994) Mankind have various dimensions such as cognitive, emotional, social and spiritual, which lack of attention to each of these dimensions leads to omission of important part of human (Farahaninia, Abbasi, Givari, & Haghani, 2006). These dimensions interact with each other and affect each other (Nejat, Montazeri, Holakouie Naieni, Mohammad, & Majdzadeh, 2006). In most health models, spiritual health has been entered as one of the basic dimensions ("Spiritual well-being,"). Spiritual health is an important dimension that strengthens the individual adjustment and mental functioning and promotes other dimensions of health (Mehrabiyan, 2016).

At the time of the occurrence of crises, spirituality is a powerful resource that is a serious obstacle in front of the psychological pressure and depression as well as by encouraging individual to health behaviors, improves overall health ("Promoting mental health,"). Spiritual health includes both religious and existence dimension, religious health is satisfaction caused by contact with a superior power and existence health is trying to understand the meaning and purpose of life. Chronic and debilitating illnesses encounter person with questions about meaning and purpose of life (Jafari et al., 2010).

Nowadays 347 million around the world are suffering from diabetes that 90% are type 2 (CORSER, 2010). The prevalence of this disease in 1995, is estimated 4 % and it is anticipated to be 5.4% in the 2025 (Porojan, Poanta, & Dumitrescu, 2012). According to World Health Organization statistics, prevalence of diabetes type 2 is 2% in Iran (World Health Organization-NCD Country Profiles, 2011). On the other hand half of cases of diabetes is unknown in the world and more than 5 million people in the world and 38 thousand die in Iran are dying due to the complications of diabetes. Statistics also show that the prevalence of diabetes is on the rise in the world (Zimmet et al. 2014).

Psychological factor was considered as one of the most important factors among more research in recent years about the etiology, prognosis and treatment of

diabetes. One of the most important psychological factors affecting the occurrence of physical diseases such as diabetes is stress, (Davadzah 2009). Psychological factors not only affect quality of life but also often determine the result of dealing with a chronic illness, especially in diabetes care which is dependent on psycho-social factors to manage and achieve the proper control of this disease (Kent et al., 2010).

Results of the study of Surwit and colleagues showed that stress has a negative impact on health, particularly in diabetics and can directly impair the control of disease by effect on diet, exercise and other self-learning behaviors, so that life style and stress management is accompanied with reduction in glycated hemoglobin (glycosylated hemoglobin) (Surwit et al., 2002).

The results of another showed reverse significant relationship between spiritual health and anxiety and depression in cancer patients in the final stages of life (McCoubrie & Davies, 2006). The findings of the study of McMahon also showed the existence of a significant relationship between spiritual health and anxiety in cancer patients (McMahon, 2004). But conflicting studies have also been reported for example a study in England on about 250 patients showed that patients who had much more powerful and higher status in terms of spiritual beliefs within 9 months of continuous follow-up after discharge from the heart and women, had worse prognosis and status than other patients (Beery et al. 2002).

Therefore, despite the paradox results in the field of the relationship between mental health or spiritual health in the absence of a study on perceived stress and its relation with the spiritual health in patients with diabetes, it seems to be important the identification of the relationship between these two variables and should be considered by care providers, policy makers, planners and economists of our health system. In addition to the comments raised about the spiritual health, it can be related as a motivational factor on the adoption of effective health. The relationship between health behaviors including control of stress with spiritual health can lead to a more desirable quality of life in the elderly that have a lot worth and more priority in clinical decisions and health policies. This study aimed to examine the perceived stress and its relationship with spiritual health in patients with diabetes in the city of Urmia.

## MATERIAL AND METHODS

This study was a cross-sectional study (descriptive – analytic) that 330 patients with type 2 diabetic of 10 rural health centers were selected by cluster random sampling method. Then, they were invited to interview and complete a questionnaire. Before conducting research were given enough explanation about subjects of study and attracted their interest to participate in the study. After signing a written consent of the research, questionnaires completed using self-reporting method and questioner's guide, in the case of illiterate people questionnaires were completed by health workers and through interview.

Questions related to demographic and blood sugar and body mass index were registered from the files of the patient by health workers. Questionnaires were completed in a step using self-reporting method. The information collection tool in this study, apart from demographic (age, sex, education level, economic status, occupation, duration of diabetes, type of treatment and smoking) and disease including two questionnaires the perceived stress questionnaire and spiritual health questionnaire.

Perceived stress was measured by questionnaire provided by Cohen et al in 1983. This tool is very suitable to determine the level of recognition of your stress in front of unpredictable and uncontrollable events of life including 14 questions from 0 to 4 with Likert scale that answers are classified as 0 (never), 1 (rarely), 2 (sometimes), 3 (more times) and 4 (all the time).

It should be noted in the case of positive questions (4.5.6.7.9.10.13), scoring can be calculated reversely. In total, the scope of scores is considered 0-56. Scores less than 28 were included in the low perceived stress group and equal or higher than 28 in the high perceived stress group (17). As well as the spiritual health variable using the scale of spiritual well-being provided by Ellison and Paloutzian in 1983, was measured that includes 20 Likert 6 pointed questions from completely agree (score 6) to completely disagree (score 1).

It is worth noting that scoring was reverse in the phrase with the negative verb forms. This scale is divided into two subscale, existence health and religious health, which each one included 10 phrase and 10 to 60 score. The total score is the sum of these two groups 20 to 120 that is a form of low spiritual health (20-40), medium (41-99) and high (100-120) (Wang, Snyder, & Kaas, 2001).

In this study, the Cronbach's Alpha for the perceived stress questionnaire obtained 0.88 and for the spiritual health obtained 0.80. Data analyzed using the SPSS v. 21. Biographical information and diseases using descriptive statistics methods were evaluated. As well as analysis of variance and the t-test and Pearson correlation

coefficient were used for the purpose of analysis (significance level  $p < 0.05$ ).

## RESULTS AND DISCUSSION

The results of this study showed that 69.1% and 30.9 were participated male and female, respectively and the mean age, BMI, FBS and HbA1C of patients were  $60.4 \pm 73.08$ ,  $28.4 \pm 5.7$ ,  $158.7 \pm 140$  and  $7.86 \pm 1.8$ , respectively. The majority of patients in terms of the education were illiterate (52.1%) and elementary (39.4 %), 66.1 % housewives, 63.9 % with moderate economic status and 77.2% with overweight and obesity. Duration of diabetes in the majority of patients (89.4%) was less than 10 years (table 1).

The majority of patients (70.9%) have reported their perceived stress in low level and the mean perceived stress in them was low ( $24.22 \pm 7.6$ ) (table 2). As well as the results of the study showed that there was a significant relationship ( $p = 0.003$ ) between the perceived stress of patients and the sex variable that the mean perceived stress scores of females was higher than males. The results showed that there was a significant relationship ( $p = 0.005$ ) between the perceived stress of patients and the occupation variable so that the mean perceived stress in housewife group was higher than other groups.

On the other hand in the group of patients that the duration of the disease was more than 10 years, the mean score of perceived stress was higher than other groups and there was a significant statistically difference between the mean scores of perceived stress and duration of diabetes ( $p = 0.008$ ). In the case of other individual variables and disease, the results suggest that there were no significant statistically relationship among the mean scores of perceived stress and complications arising from the disease ( $p = 0.841$ ), smoking ( $p = 0.523$ ), level of education ( $p = 0.075$ ) and marital status ( $p = 0.111$ ) while there was a significant statistically relationship between mean perceived stress and economic status ( $p = 0.001$ ) and type of treatment ( $p = 0.028$ ).

In terms of the level of the spiritual health, all patients were moderate to high and spiritual health score was in moderate level (table 2). As well as there were a statistical significantly relationship among spiritual health and variables in terms of sex ( $p = 0.045$ ), duration of disease ( $p = 0.008$ ), type of treatment ( $p = 0.028$ ), economic status ( $p = 0.001$ ) and occupation ( $p = 0.005$ ) while this relationship was not observed among spiritual health and complications of disease ( $p = 0.122$ ), smoking ( $p = 0.611$ ), marital status ( $p = 0.111$ ) and the level of education ( $p = 0.075$ ). According to Pearson correlation test, there was a significant and reverse relationship between

Table 1: Demographic and disease information of diabetic patients

Variable	levels	Frequency (%)
Sex	Male	(30.9)102
	Female	(69.1)228
Education level	Illiterate	1/52)172
	Elementary Diploma	(4/39)130
	Collegiate	(6/7)25 ( 9/0)3
Occupation	rancher	(2/18)60
	self-employed	(10)33
	employee	(5/1)5
	housekeeper	(1/66)218
	others	(3/4)14
Marital status	Single	(1/2)7
	Married	(9/83)277
	Divorced	(3/0)1
	Widow	(6/13)45
Duration of diagnosed diabetes (year)	Less than 2	(17)56
	5-2	(1/49)162
	9-6	(3/23)77
	More than 10	(6/10)35
Economic status	Low	(7/19)65
	Moderate	(9/63)211
	Good	(4/16)54
Treatment type	Insulin	(2/11)37
	Pill	(2/74)245
	Food	(3/7)24
	Food and Pill	(3/7)24
Smoking	Yes	(9/10)36
	No	(8/88)293
BMI	Less than 18.5	(5/1)5
	24.9-18.5	(2/21)70
	29.9-25	(8/44)148
	More than 30	(4/32)107

Table 2: Frequency distribution of Spiritual health and perceived stress in diabetic patients

Factor	level	Range	SD± Mean	%	Frequency
Perceived stress	<28	55-6	7.6±24.22	70.9	234
	28≤			29.1	96
	Total			100	330
Spiritual health	Moderate (99-41)	119-57	14.2±95.6	46.1	152
	High (120-100)			53.9	178
	Total			100	300

perceived stress and its dimensions (religious and existence health) (table 3).

The results of this study showed that 70.9 % of the patients had low perceived stress that implies symptoms of mental health in patients with diabetes and only 29.1 % reported high perceived stress that based on the study of wang and colleagues can be associated with problems and the complexity of the issues related to the physical condition of the patients and familial problems (Wang et al., 2001).

Table 3: Correlation between spiritual health and perceived stress in patients with diabetes

Spiritual health dimensions	Blood sugar
Existence health	p=0/31 r=-0/07
Religious health	p=0/35 r=-0/06
Spiritual health(Total)	p=0/27 r=-0/07

Unlike the study of Bastani (1) and Malek (Malek, Poorafkary, Dadashzadeh, & Safaeeyan, 2008), there was no significant relationship between perceived stress and age in this study. There was a significant relationship between the status of occupation and perceived stress, as in housewife group perceived stress was higher than employed group that is consistent with the study of Shoja and colleagues. Considering that people with specific occupation involved in a string of job activities and are associated with participation in different social environments and various people more than those who have not job. Occupation can affect their mental health (SHOJA, 2013).

In this study, despite the lack of a meaningful relationship between education level and perceived stress, mean perceived stress scores on patients with college education was less than patients who had not diploma. It represent that education can reduce perceived stress and anxiety of people in personal affairs and social role and finally mental health by increasing the confidence, as well as an increase in social communication. On the other hand social and cultural limitations and as well as the inability of individuals to use effective ways to deal with stress factors in people with a lower education level, can be main reason of the high stress that these results are consistent with the results of other study (Bastani et al. 2005; Habibi et al 2008; Harpham et al.2004) on the other hand, in this study the mean perceived stress scores in patients who have had specific diet was significantly high compared with patients who have had insulin and pills diet that it's reason can be difficulty of compliance of specific diet and fear and stress resulting from adherence to the diet.

Based on the results of this study, 53.9 % of patients have reported their spiritual health in high levels, while in the study of Bastani et al (2005) 43.9% of patients had moderate spiritual health (Bastani et al., 2005). In this study, similar to the results of Jadidi study (Jadidi, Farahaninia, Janmohammadi, & Haghani, 2011), there was no a significant relationship between spiritual health and age of the patients, while in other studies (Bastani et al., 2005; Zarei et al. 2015) a significant and direct relationship between spiritual health and age of the patients were reported, so that whatever the age of the patients is increased, the tendency towards spirituality will be more. In our study, unlike the results of the study of Bastani (Bastani et al., 2005), there was a significant relationship between spiritual health and sex of patients.

There was a reverse relationship between perceived stress and spiritual health dimensions in this study. In other words, patients who had higher perceived stress, had lower spiritual health and conversely patients who had lower perceived stress, had higher spiritual health. These results were consistent with the results of McCou-

brie & Davies, (2006). While Beery et al., (2002) showed that patients who had higher and powerful status in terms of spiritual beliefs, had worse prognosis than other patients within 9 months of continuous follow-up after discharge from the heart and women wards

## CONCLUSION

Based on the findings of this study, perceived stress were low in the patients with diabetes mellitus with higher scores of spiritual health. So it is necessary to be paid attention to the psychological and spiritual dimensions of health in patients with diabetes in order to improve the quality of care. It can be used in accordance with the results of this study the importance of paying attention to the spiritual beliefs in life to deal with problems arising from chronic diseases. Care is beyond cure and attention to the various dimensions of the human being in the care of chronic disease seems quite important. The dominant religious culture in Iranian society is also facilitator to achieve the comprehensive approach to care. According to the results of the present study, it is suggested to compile programs and approaches in order to promote the spiritual health and quality of life in patients with diabetes.

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