

## Comparison of Spiritual Experiences and Distress Tolerance between Women with Type 2 Diabetes and Healthy Counterparts: A Cross-Sectional Study

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### ABSTRACT

**Background and objectives:** Diabetes is one of the main causes of morbidity and mortality worldwide. Spiritual experiences and religious belief can reduce tension and improve physical and mental health in diabetic patients. The purpose of this study was to compare spiritual experiences and distress tolerance between women with type 2 diabetes and healthy counterparts in Tehran, Iran.

**Methods:** This descriptive and cross-sectional study was carried out on 100 women with type 2 diabetes who were selected from the Ferdowsi Diabetes Clinic (Tehran, Iran) and 100 non-diabetic counterparts. The participants responded to the Daily Spiritual Experience Scale and the Distress Tolerance Scale. Data were analyzed with SPSS 19 using independent t-test.

**Results:** The mean score of daily spiritual experiences in women with diabetes ( $61.35 \pm 13.54$ ) was significantly higher than that in the healthy counterparts ( $47.47 \pm 12.57$ ) ( $P < 0.01$ ). Also, the mean score of distress tolerance was significantly higher in women with type 2 diabetes ( $44.69 \pm 12.58$ ) than in the controls ( $39.85 \pm 9.65$ ) ( $P < 0.01$ ).

**Conclusion:** The results of the study showed that spiritual experiences and distress tolerance can be effective in improving the quality of life of people with type 2 diabetes.

**KEYWORDS:** Distress tolerance; Diabetes; Spirituality

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## INTRODUCTION

Diabetes is a chronic disease that influences individual, social and psychosocial functioning (1). It is one of the major causes of morbidity, mortality and increased health care costs worldwide (2). There are currently over 180 million diabetics in the world, and it is estimated that this number will double by the year 2030 (3). The disease can also lead to cardiovascular disease, blindness, renal failure, lower limb amputation, pregnancy complications and flue-related death (4, 5). Factors such as stress, socioeconomic problems, smoking, alcohol consumption, engaging in hazardous occupations, unhealthy diet, insufficient physical activity and obesity can affect the quality of life of patient with type 2 diabetes (6). The psychosocial complications of diabetes includes pain, anxiety, marital and familial problems, occupational problems, nutritional problems and inability to make decisions (7-10).

According to Melkus (2008), spirituality should be emphasized for a better glycemic control in patients with diabetes (11). In recent decades, many have recognized beliefs and spiritual experiences as important factors of physical health, well-being and treatment process (12). Research has shown that spiritual experiences not only affect the mood, mental health and physical well-being, but also improve the immune and endocrine systems (13). Studies have shown that spiritual experiences improve the quality of life, promote mental health and reduce stress in women with diabetes (14). Although religious beliefs and spiritual experiences may not cure a patient, they can help the patient cope with the disease, associated problems and risk of death (15).

Another psychological factor that can be related to diabetes control is distress tolerance. Stress and distress are the body's reaction to adverse environmental conditions. Nevertheless, low amount of stress could be beneficial and makes life more attractive. Tensions provide people with the opportunity to make effort and deal with risks in their lives. Excessive tension can cause critical situations that could endanger individual and

social life (16). Individuals with low distress tolerance engage in an erroneous attempt to cope with negative emotions, which leads to behavioral disorder (17-19).

Considering the above-mentioned issues and the increasing prevalence of diabetes, the present study aims to determine and compare spiritual experiences and distress tolerance in individuals with and without type 2 diabetes.

## MATERIAL AND METHODS

This descriptive-analytical study was carried out on 100 women with type 2 diabetes (aged 35-60 years) who were referred to the Ferdowsi Diabetes Clinic in Tehran (Iran) during April and May 2018. Aged-matched healthy control individuals were selected from volunteers who participated in morning exercise at the Laleh Park in Tehran, Iran.

Inclusion criteria included having type 2 diabetes for at least five years and enough education for understanding and responding to questionnaires. Exclusion criteria included having a mental disorder, lack of cooperation with the researcher and participation in psychological interventions for improving mental status. Written consent was obtained from all participants. Data were collected using the following questionnaires: the Daily Spiritual Experience Scale (DSES) and the Distress Tolerance Scale (DTS).

DSES was first created by Underwood and Teresi (2002) as a multidimensional tool of spirituality in order to effectively examine diverse areas of religion and spirituality in health studies (20, 21). The scale has 16 items in which higher scores represent less spiritual experience. However, we reversed this rule for easier interpretation of results (i.e. higher scores indicate more spiritual experiences). In a review by Tonigan et al. (2002), the internal consistency (Cronbach's alpha) of the scale was found to be 0.94 and 0.95 (21). Taghavi and Amiri (2010) reported a Cronbach's alpha of 0.88 in the test and 0.92 in the retest (23).

DTS is an epidemiological self-evaluation index of emotional distress tolerance that was developed by Simons and Gaher in 2005. The

scale has 15 items and Cronbach's alpha of 0.82 (17) and 0.86 (23).

The collected data were analyzed with SPSS 19 using independent t-test.

**RESULTS**

The demographic characteristics of the participants are shown in table 1.

**Table 1. Demographic characteristics of all subjects**

Variable	Frequency	Percent	
Age	30 – 50 years	65	32.5
	50 – 60 years	135	67.5
Marital status	Married	164	82
	Single	36	18
Education level	High school diploma	62	31
	University degree	138	69
Severity of hyperglycemia	Mild	82	41
	Severe	118	59

As shown in table 2, results of the t-test showed a significant difference between the mean score of spiritual experiences of

diabetic and non-diabetic women (P=0.001). Moreover, the mean score of distress tolerance in women with type 2 diabetes (44.69) was significantly higher than that in non-diabetic women (39.85).

**Table 2. Comparison of the mean scores for spiritual experiences and distress tolerance in women with and without type 2 diabetes**

Variable	Group	Mean	Standard deviation	T	df	P-value
Spiritual experiences	Diabetics	61.35	13.548	7.911	198	0.001
	Control	47.47	12.578	7.911	198	0.001
Distress tolerance	Diabetics	44.69	12.588	3.051	198	0.003
	Control	39.85	9.659	3.051	198	0.003

**DISCUSSION**

The results showed that the level of spiritual experiences in women with type 2 diabetes is higher than in non-diabetic women. This finding is consistent with findings of Shahdadi et al. (2015) that indicated a relationship between spiritual health and glycemic control in diabetics (25). Another study found a positive relationship between spirituality and disease tolerance (19). Another study claimed that frequent pray is associated with improved mental health and reduced depression and anxiety (26). Spirituality and spiritual practice can increase motivation and improve self-care and glycemic control in diabetic patients (27). Religious and spiritual resources not only

Help patients overcome difficulties, but also improve their quality of life (28). Spiritual people are happier, live longer and generally have a better quality of life (26).

Similar to our results, another study found that level of distress tolerance is higher in women with type 2 diabetes. Elstad (2008) revealed that increased environmental, familial and personal distress increases glucose levels (29). Kumari et al. (2004) found that high occupational distress, poor social support and long working hours may be involved in the increasing incidence of diabetes (30). Glycemic control has a significant correlation with diet in diabetic

patients with sustainable mental and social resources, such as education, marriage and distress-coping strategies (30, 31). Patients with lower level of distress have favorable metabolic control, while those who experience higher level of distress have poor metabolic control (32).

Among limitations of the present study, we can point out the intrinsic limitations of cross-sectional studies, limited diversity of subjects (all subjects were women and selected from one city) and the fact that the control subjects were exercising regularly, which could have influenced psychological factors and distress tolerance.

### CONCLUSION

Spiritual experiences and distress tolerance are psychological components that can help diabetic women adapt to their illness and control blood glucose levels. Therefore, it is recommended to health professionals to consider these two components when dealing with diabetic patients. In addition to drug therapy, therapeutic centers for diabetics can also exploit empowerment of psychological skills, such as coping with stress and problem solving.

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### DECLARATIONS

#### *Funding*

Not applicable.

#### *Ethics approvals and consent to participate*

The study has been approved (code: 950237060) by the ethics committee of the Islamic Azad University, Electronic Branch, Iran.

#### *Conflict of interest*

The authors declare that there is no conflict of interest regarding publication of this article.

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