



A Survey on Relationship of Spirituality with the Perception of Suffering and Quality of Life in Patients with Type 2 Diabetes

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ABSTRACT

Aims Spirituality can be an important source of coping with the disease, reduce feelings of suffering and improving the quality of life in patients with chronic diseases. The purpose of the current study was to determine the relationship of spirituality with the perception of suffering and quality of life in patients with type 2 diabetes.

Instruments & Methods This was a descriptive-correlation study. Participants were 145 patients with type 2 diabetes of rural health clinics and the valley hospital in Khorramshahr city which were selected via stratified random and available sampling methods. Data collection tools were version of 29-item of the spiritual questionnaire (Parsian and Dunning), experience and perception of suffering questionnaire (Schulz) and version of 26-item of the quality of life questionnaire (WHO). Data were analyzed using SPSS 16.0 software and Pearson's correlation, T-test, ANOVA, Post Hoc, and stepwise regression analytical statistics.

Findings The spirituality average scores were 79.41 ± 15.82 , perception of suffering average scores, 54.89 ± 2.14 , and quality of life 74.44 ± 1.65 . There was a significant negative relationship between spirituality and feelings of suffering ($p < 0.05$) and a significant positive relationship between spirituality and quality of life ($p < 0.0001$).

Conclusion A strong correlation between spirituality with quality of life and suffering in patients with type II diabetes demonstrates the roles and responsibilities of healthcare providers, including physicians and nurses and the patient's family in meeting the varied spiritual and religious needs of patients along with therapeutic actions. Paying attention to improve spiritual health is also important in education programs for these patients.

Keywords Spirituality; Suffering; Quality of Life; Diabetes

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Introduction

Diabetes, as the greatest epidemic of the century, affects almost all age groups in all countries [1] and results in the increase in the number of deaths, disabilities, decreasing the quality of life, increase in economic and social costs [2]. According to the reports from WHO and International Diabetes Federation (IDF), the number of patients diagnosed with diabetes has raised from 200 million in the year 2000 to 382 million in 2011 and it is expected that this number reaches to the incredible number of 592 million by the year 2035 [3]. The greatest increase in prevalence will be in developing countries, especially in the Middle East [4]. According to the studies, there were around 4 million patients diagnosed with diabetes in Iran during 2008 and based on some researches, the number of people with diabetes in Iran is estimated by the IDF to be 4.6 million in 2015 [5]. Experts believe that this number will triple during the coming 15 years, so that by the year 2021, more than 12 million patients will be diagnosed with diabetes [3, 6].

The consequences from weak management of the diabetes are highly considerable which include cardiovascular, ocular, and renal problems along with the risk of stroke, neuropathy and impacts on the organs, mental diseases and other conditions which result in the decrease in quality of life and finally early death [7].

Spirituality is a quality inherent in all human beings and expressed and experienced in multifaceted connections with the self, others, nature, and God or life force [8]. Spirituality and spiritual health are among the fundamental concepts in caring for patients diagnosed with chronic diseases [9]. Today, more people than ever have a tendency towards spirituality and spiritual matters [10]. It has been mentioned in many studies that patients diagnosed with chronic diseases such as diabetes benefit from spirituality as a method in coping with diseases, forming a sense of meaning and goal in life, decreasing the suffering caused by the disease and disappointment and proper management of the disease [11-18].

Suffering is not an integrated and simple conceptual phenomenon, but a multi-aspect complex structure which includes various real aspects. The suffering caused by the disease sometimes expands more than the experience of the physical pain and includes economic, family, psychological, and spiritual aspects of life [19].

Beliefs and spiritual and religious methods are the fundamental sources for coping with the pain and suffering of many patients and families [20]. In the book *Principles of Nursing*, Taylor *et al.* introduce the component of religion as the most powerful element affecting the pain tolerance and express that in some religions, individuals see the pain as a

clearing agent of self and society, due to their religious beliefs and as a result, they hardly ever accept the palliative measures and benefit from spirituality in confronting the pain [21].

Quality of life is a multi-aspect, dynamic and valuable concept [13, 22-24] which has been proposed as a significant concept in medical studies during recent decades [25]. The World Health Organization (WHO) defines health as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns [24]. Diabetes impacts the quality of life in a considerable manner, for this disease leads to formation of limitations in job, profession, social life, family relationships, leisure time activities and patients' sexual lives [25]. Generally put, most of the studies which have researched the quality of life in patients diagnosed with diabetes and the general population have suggested that patients diagnosed with diabetes have a lower quality of life [26]. The purpose of the current study was to determine the relationship of spirituality with suffering and quality of life in patients diagnosed with diabetes type 2.

Instruments & Methods

The present study is of a descriptive correlational. The statistical society in this study included patients diagnosed with diabetes type 2 in Khorramshahr city. Initially, among six Rural Health Clinics, three centers were selected through stratified random sampling and samples were selected through random sampling proportional to the number of patients in list of diabetes type 2 patients under care by these health centers. Also, a number of samples were selected through convenience sampling from Valiasr Hospital in Khorramshahr city. Among 150 samples, 145 individuals filled up the questionnaires and 5 of the questionnaires were incomplete on return. The inclusion factors were being above 18 years old, being diagnosed with diabetes type 2 for more than one year and being willing to participate in the study. The exclusion parameters included being diagnosed with other chronic diseases that were not related to diabetes. The data were collected self-report and for parents that were illiterate, the questions were read to them by an experimenter who was unaware of hypotheses. Spirituality was measured using the spirituality questionnaire (Parsian and Dunning, 2009). In this self-report tool, the participant should determine their agreement or disagreement with each statement in a four-point Likert scale (from 1- Completely Agree to 4- Completely Disagree). This questionnaire included four subscales of self-awareness (10 statements), importance of spiritual beliefs (four statements), spiritual practices (six statements), and spiritual needs (nine statements)

which studied the individual's personal spirituality through 29 statements in total and the spirituality score range for the participants was between 29 to 116. The reliability and validity of the questionnaire were tested through test re-test and Cronbach's alpha 0.93 in Pirasteh Motlagh and Nikmanesh study [19].

The scale designed by Schulz *et al.* was used to assess the suffering experience and perception. This scale included three domains of physical suffering (nine items related to the experiencing symptoms and nine items related to the distress associated with symptoms), psychological suffering (15 items) and existential-spiritual suffering (nine items), with 42 items and the score range between zero to 135, so that the physical suffering and psychological suffering were in four-point Likert scale and the existential-spiritual suffering was in five-point Likert scale. The reliability and validity of the scale were tested through test re-test and Cronbach's alpha 0.7 in Pirasteh Motlagh and Nikmanesh study [19].

Considering the translation and psychometry of the Persian version of World Health Organization Quality of Life (WHOQOL-BREF) questionnaire, which was carried out by Nejat *et al.* [27], the validity and reliability and acceptability of the questionnaire in Iran was approved to be used for patients in Iran. Also, in their study, Jahanlou *et al.* [25] state that although this questionnaire is not for diabetic patients, it could effectively show the patients personality characters and glycemic control in diabetic patients. This questionnaire was used in this study, as well. This questionnaire includes four subsets of physical health (seven questions), psychological health (six questions), social relationships (three questions), and environmental health (eight questions) which has 24 questions in total and has the score range between 24 and 120 in five-point Likert scale. However, there were two questions which generally assessed the health condition and quality of life that were not related to any aspect.

This study approved with code 14578 by the Academic Center for Education, Culture and Research (ACECR). The researchers explain the objectives of the study to the participants and assuring them of confidentiality. Besides, participants were required to sign an informed consent. Patients answered questions about spirituality, suffering and quality of life.

The collected data were analyzed by SPSS 16. According to the Asymp. Sig. (2 tailed) of the Kolmogorov Smirnov test that was more than the p. value 0.05, as a result a normal distribution exists (0.549>0.05). Therefore, this study use parametric tests such as Pearson correlation coefficient, T-test, ANOVA, and stepwise regression.

Findings

Among 145 participants, 63 patients (43.4%) were male and 82 patients (56.6%) were female and their average age was 56.77±1.12. 74 patients (51%) were illiterate, 36 patients (24.8%) were with primary education, 24 patients (16.6%) had junior high school education, 10 patients (6.9%) had high school diploma and only one patient (0.7%) had a university degree.

The mean spirituality score in studied diabetic patients was 79.41±15.82, the mean of suffering score was 54.89±2.14 and the mean of quality of life score was 74.44±1.65 (Table 1). Pearson correlation suggested that there is a negative significant relation between spirituality and suffering and all its aspects (p<0.05) so that the higher the spirituality in diabetic patients, the lower the physical suffering (r= -0.64; p<0.0001), psychological suffering (r= -0.21; p<0.010), existential-spiritual suffering (r= -0.53; p<0.0001) and the suffering in total (r= -0.61; p<0.0001). Also, there was a positive significant correlation between spirituality and quality of life and its aspect (p<0.0001), so that the higher the spirituality in the studied patient, the better physical (r= -0.64; p<0.0001), psychological (r= -0.65; p<0.0001), environmental (r= -0.55; p<0.0001), and social (r= -0.56; p<0.0001) health they had and had a better quality of life (r= -0.70; p<0.0001) in general (Table 2).

Stepwise regression for explaining the best predicting components of physical suffering showed that self-awareness components entered the regression equation in the first step and it could explain 44% of the variance or this aspect and in the later steps, components of importance of spiritual beliefs and spiritual practices entered the equation and explained 50 and 45% of the variance, respectively. For the physical suffering aspect also, in the first step self-awareness and in the next step spiritual needs entered the regression equation and explained 12 and 15% of the variance, respectively. Self-awareness with 32% of explaining the variance was the only component which entered the regression equation to predict the existential-spiritual suffering. It could be generally said that the self-awareness component has been the best predictor of suffering aspects (Table 3).

Stepwise regression results for predicting quality of life aspects through spirituality components suggested that for the physical health aspect, spiritual needs entered the regression equation and explained 40% of the variance and in the next steps, 44 and 46% of variance was explained by the entrance of self-awareness and importance of spiritual beliefs components, respectively. The best predictors of psychological health and social relationships were so that for the psychological health, in the first step, self-awareness entered the

equation to explain 39% of the variance and in the second step, the spiritual practices entered the equation to explain 45% of the variance, while, for the social relationships, in the first step spiritual practices and in the second step self-awareness entered the equation to determine 28 and 31% of the variance, respectively. The only predictor component of environmental health was the spiritual needs which could determine 28% of the variance (Table 3).

On the study of the relation between demographic variables and spirituality, quality of life and suffering, statistics T-Test showed that there was no significant difference in gender in any of them (p= 0.06, p= 0.539, and p= 0.804, respectively) while ANOVA showed that educational background had a significant difference in all three (p<0.0001, p<0.001, and p<0.027, respectively:), so that the more educated the participant is, the higher the spirituality and quality of life grows, while the suffering lessens. Pearson correlation suggested that there is a significant inverse relation between age

and spirituality (r= -0.33; p<0.0001,) and quality of life (r=-0.37; p<0.0001) and there was a significant direct relation between age and suffering (r= 0.247; p= 0.003).

Table 1) Mean and standard deviation of spirituality, suffering, quality of life and their subscales scores in patients diagnosed with diabetes type 2

Variables and subscales	Statistics mean	Range of obtainable score
Spirituality	79.41±15.82	(29-116)
Self-awareness	29.59±5.43	10-40
Importance of spiritual beliefs	12.56±2.39	4-16
Spiritual practices	13.72±4.38	6-24
Spiritual needs	23.54±6.32	9-36
Suffering	54.89±2.14	(0-135)
Physical suffering	25.08±1.22	0-54
Psychological suffering	14.21±7.00	0-45
Existential-spiritual suffering	15.61±6.83	0-36
Quality of life	74.44±1.65	(24-120)
Physical health	19.29±5.49	7-35
Psychological health	18.48±4.07	6-30
Environmental health	21.81±5.73	8-40
Social relationships	8.52±2.44	3-15

Table 2) Correlation of suffering and quality of life aspects with spirituality and its components in patients diagnosed with diabetes type 2

Variables and subscales	Self-awareness	Spiritual beliefs	Spiritual practices	Spiritual needs	Spirituality
Total suffering	-0.63**	-0.16	-0.45**	-0.54**	-0.61**
Physical suffering	-0.58**	-0.09	-0.63**	-0.63**	-0.64**
Psychological suffering	-0.35**	-0.14	-0.12	-0.09	0.21*
Existential-spiritual suffering	-0.57**	-0.19*	-0.45**	-0.46	-0.53**
Quality of life	0.63**	0.26**	0.63**	0.67**	0.70**
Physical health	0.58**	0.17	0.58**	0.63**	0.64**
Psychological health	0.63**	0.27**	0.58**	0.59**	0.65**
Environmental health	0.45**	0.25**	0.50**	0.53**	0.55**
Social relationships	0.47**	0.26**	0.53**	0.53**	0.56**

*, p<0.05; **, p<0.01

Table 3) Stepwise regression results for predicting suffering and quality of life aspects based on spirituality components

Criterion variables	Predictor variables	β	t	R	Adjusted R	Sig.
Suffering						
Physical suffering	Self-awareness	-0.34	-4.348	0.668	0.44	<0.0001
	Importance of spiritual beliefs	0.34	5.166	0.713	0.50	<0.0001
	Spiritual practices	-0.40	-3.809	0.745	0.54	<0.0001
Psychological suffering	Self-awareness	-0.53	-5.150	0.353	0.12	<0.0001
	Spiritual needs	0.27	2.592	0.405	0.15	0.011
Existential-spiritual suffering	Self-awareness	-0.57	-8.337	0.572	0.32	<0.0001
Quality of life						
Physical health	Spiritual needs	0.49	5.809	0.635	0.40	<0.0001
	Self-awareness	0.33	3.918	0.669	0.44	<0.0001
	Importance of spiritual beliefs	-0.18	-2.617	0.688	0.46	0.010
Psychological health	Self-awareness	0.43	5.527	0.628	0.39	<0.0001
	Spiritual practices	0.32	4.083	0.676	0.45	<0.0001
Environmental health	Spiritual needs	0.53	7.558	0.534	0.28	<0.0001
Social relationships	Spiritual practices	0.39	4.491	0.534	0.28	<0.0001
	Self-awareness	0.23	2.621	0.564	0.31	<0.0001

Discussion and Conclusion

This study tries to determine the relation of spirituality with suffering and quality of life in patients diagnosed with diabetes type 2. The findings suggested that spirituality has a significant negative relation with suffering and all its aspects, so that the higher the spirituality in patients, the lower their suffering and these results are in

accordance with Pirasteh Motlagh and Nikmanesh [19] and Krause and Bastida [28]. Suffering is a multi-aspect and stressful concept which could affect all physical, emotional, psychological, spiritual and social aspects of patients' lives [29] and religion and spirituality are among the main sources used to overcome suffering [19]. Health is an endowment from God in Islam and illness is a divine test and

participating in spiritual and religious practices leads to increase in believers' capability in overcoming the hardships [30]. In their study, Harrison *et al.* also, came to this conclusion that individuals who had reported going to the church once and more than once per week feel lesser pain and suffering [31].

Life with a desirable quality has its roots in Muslims' beliefs and religious teachings [5]. Spiritual and religious resources not only help the patients in overcoming problems, pain and suffering, but also bring about a better quality of life [19, 30]. Spiritual individuals have more positive prospect, better quality of life and they are more satisfied with their lives [20]. In the current study also, there was a significant positive correlation between spirituality and quality of life and its aspects, so that the higher the spirituality of individuals, the higher their quality of life. Other similar studies [13, 32, 33] also, have approved this correlation in their studies samples.

The results showed that self-awareness component was the best predictor of suffering, which was in accordance with Pirasteh Motlagh and Nikmanesh study [19]. Self-awareness is the capability to recognize self, and one's desires, fears and hatreds. Individuals who retain self-awareness identify their feelings and become aware of them and control these feelings. They become aware of their own strong and weak points and by relying on their own strong points, they decrease their weaknesses and that is how they reach calmness [34].

Stepwise regression results for predicting aspects of quality of life through spirituality components were to some extent different from suffering aspects. Only in the aspect of psychological health, self-awareness was the best predictor, while in the physical health and environmental health, spiritual needs had the highest prediction power and in the social relationships also, spiritual practices had the highest power in explaining the variance. The main property of spiritual needs from Islam's point of view is the fact that they have their roots in human nature and it explains the relationship between human and God in the realm of ethics and spiritual values [35]. In Pirasteh Motlagh and Nikmanesh study [19], the component of self-awareness was the best and most unique predictor of quality of life which could be due to the religion of the studied participants in Sistan and Baluchestan Province with 43 patients who were mostly Sunni Muslims and also the difference in the disease type which was HIV/AIDS.

On the study of the relation between demographic variables with spirituality, quality of life and suffering in this study, it was determined that there was no significant difference in gender in any of them, while educational background had a significant difference in all three. In the study of

Habibi and Savadpour [36], age and educational background were related to the spirituality level. Also, in the study of Jadidi *et al.* [23], spirituality did not show any difference in both genders. On Choi-Kwon, Yue and Shafiei which were carried out in South Korea, China and Iran [37], respectively, and also, in the study of Yazadanfar *et al.* [38] there was no significant difference found in both genders, regarding the quality of life, while there has been considerable differences found in quality of life between men and women in some studies [23, 30, 37].

In studies of Afzalaghaee *et al.* [37] and Szepletowski *et al.* [39], the quality of life in various age groups and educational backgrounds had a significant difference. Also, in the study of Glasgow *et al.* [40], age had a significant relation with quality of life which was in accordance with this study.

Considering the results of the current study, it could be claimed that the cultural, spiritual and religious contexts in Iran are among the main sources for decreasing physical and psychological pain and suffering and also increase in quality of life in patients diagnosed with diabetes type 2. This strong correlation demonstrates the roles and responsibilities of healthcare providers (i.e. physicians, nurses and patients' families), clergyman and spiritual health professionals in meeting the varied spiritual and religious needs of patients along with their therapeutic management. Focus on improving spiritual health is also important in education programs for these patients. The limitations of this study are small sample size, using of non-national instrument to assess spirituality and self-reports. So, it is proposed that similar researches be done with a larger sample size and spirituality instrument that it is designed based on the spiritual health indicators in religion Islam.

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