

Original Article

The role of Mediator's Spirituality in Relationship between Resilience and the Quality of life in Patients with type II diabetes

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(Received:28 Jun 2018; Revised: 20 August 2018; Accepted:2 Sep 2018)

Abstract

Introduction: The purpose of this study was to investigate the role of mediator of spirituality in the relationship between resilience and quality of life in patients with type 2- diabetes.

Methods: In this descriptive-correlational study, 300 patients with type 2-diabetes participated in this study with purposive sampling method. Quality of life, resilience and spirituality questionnaires were used to collect data. In order to analyze the data, structural equation modeling was used.

Results: The results showed that resilience and spirituality are good predictors of quality of life. Also, based on the findings of structural equation modeling, there are significant and positive causal relationships between resilience, spirituality and quality of life, and the role of mediator of spirituality in the relationship between resilience and quality of life has been confirmed.

Conclusion: These findings suggest that the use of spirituality as a coping strategy in people with high resilience will lead to improvement in quality of life.

Declaration of Interest: None.

Key words: Spirituality, Resiliency, Quality of life, Type 2 diabetes.

Introduction

Before the twentieth century, most people died of acute infection, and life expectancy was much lower among individuals with chronic diseases. Nowadays, although the prevalence of chronic disease has increased recently, life expectancy is greater comparing to past [1]. Generally, 60 % of mortality was due to chronic diseases; and 80 % of these deaths had occurred in countries with low and average incomes [2]. The diabetes is considered as one of the most prevalent chronic diseases. Diabetes is a group of non-homogeneous (heterogeneous) metabolic diseases that their characteristic is a chronic increase in blood sugar, the disorder in the metabolism of carbohydrate, fat, and protein and will be created as a result of some defects in insulin secretion or insulin action [3]. The main symptom of diabetes is increase in blood sugar levels that have changing degrees over time [4]. The World Health Organization has

determined four major types of diabetes: diabetes type I, diabetes type II, gestational diabetes and diabetes in other secondary cases [5].

Approximately 90% to 95% of diabetics' individuals are diagnosed with mellitus type II. Although it is possible that NIDDM to occur at any age, it usually appears after the age of 40 [1]. Also, studies have shown that the incidence of symptoms in these patients is common, especially, long-term symptoms such as damage to the retina and blindness, etc., and numerous, psychological problems, individuals' communications, family and social are considered as symptoms of diabetes [6]. Treatment of all these problems has resulted in the fact that patients, as well as government, face direct and indirect costs [7]. The most important of the mentioned symptoms are psychological issues [18].

Psychological stress is capable of initiating or intensifying the increase in blood sugar by

activation of the hypothalamic-pituitary-adrenal axis [9]. By taking a look at the history, majority of preventive research and determination of interventions related to problem behaviors were focused on identifying the causes of danger and high-risk populations; but currently, it has been created a wider scope through putting its concentration on protective factor [10]. One of the most important protective factors in such broaden field is resilience [11]. The resilience increases the ability to endure and adjust to life's crises and to overcome them. Also, it prevents patients with chronic-disease from psychological problems and immune them against the psychological effects of problematic events [12]. Resilient individuals have the privilege of higher mental health, have better self-adjustment skills, self-esteem and social support and they are less likely to get involved in behaviors jeopardizing their health [10]. With this in mind, scientists are putting resilience and vulnerability as of two contrasting continuum poles [13]. The results of the studies have indicated that high resilience, through the creation of higher adaptive flexibility, is accompanied using higher compliance of sanitation regulations and reduction in vulnerability against psychological and physical problems [14]. On the other hand, there is a general agreement, that improvement in the quality of life must be considered as one of the main goals of chronic diseases' treatment [15]. Not only has it been noticed to mortality reduction as well as increasing patients' lifespan, but also should make efforts in order to provide them with an acceptable life quality and recognition of involved factors such as spirituality. Reports have indicated that the lower the quality of life of patients, the more psychological problems they have, and on the other hand, such problems culminate in decreasing their quality of life. [16]. Quality of life is a multidimensional, dynamic and broader concept that emphasizes on the four dimensions including physical, cognitive, social, and welfare related to the environment [15]. Reduction in quality of life not only reduces the afflicted individual's feeling of satisfaction in the life, but also would be

effective in treatment of diseases through affecting an individual's commitment towards completing the treatment [9].

The findings in the field of chronic diseases including diabetes suggest that most of these diseases are "multifactorial" and require some efforts based on the "bio-psycho-social" pattern in order to manage the disease and reduce the economic and sanitation's heavy burden (17).

Between these factors, the spirituality is the most highlighted one. Numerous efforts on examining the relationship between health and spirituality and determining the type of that have been done by "spiritual beliefs structure" theories.

Ellison has suggested that spiritual beliefs are consisted of psychological and religious elements. According to spirituality's technical context, spirituality is a two-dimensional concept (18). The first dimension is religious spirituality in which an individual is expressed in accordance to the concept of the ultimate reality, from religious perspective and style of expression. The second dimension is internal spirituality, which is psychological and it does not have any relationship with existence of Holy or the ultimate reality [17]. Creation of a spiritual relationship with an unlimited power gives an individual the assurance about a strong force that always supports him/her (20). These individuals meeting the events more easily, by their reliance on faith and belief, undergo a lower degree of stress and anxiety and as a result, their expectation of the future is more optimistic and hopeful [18].

Considering the abovementioned issues, this study is carried out aimed to "prediction of optimism, hope, and welfare, based on spiritual beliefs in parents having children with autism visiting Esfahan's Hazrat Zeinab Charity for Rehabilitation Mentally Disabled.

Methods:

The present study is a correlational descriptive study and specifically is based on Structural Equation Modeling (SEM). The statistical population were all the male patients afflicted with Diabetes type II visiting Bahman Shahr hospital. The number of samples was obtained 300 individuals, according to Krejcie

and Morgan table (95 percent confidence level and 5 percent sampling error) and corresponding average difference and deviation in similar studies (at least three relevant studies) using available sampling method. Data gathering was carried out using the following questionnaires:

a) World Health Organization Quality of Life:

This questionnaire is consisted of 26 questions that assess the subject's life quality of in a Likert spectrum (1-5), in four dimensions including physical health (7 questions), psychological health (6 questions), social health (3 questions) and environmental health (8 questions). The first two questions belong to neither of dimensions. After doing required calculations in either of scopes, a score equivalent to 4-20 will be obtained for each scope in which 4 is an indicator of the worst and 20 is an indication of the best status for the target scope. These scores are convertible to those in a 0-100 domain. This scale possesses an optimal Discriminant Validity, Content Validity, and test-retest reliability and its Cronbach's Alpha is reported between 75 to 89 percent, for the quad scales and the entire scale and scale [19]. Within Iran's normalization, test validity corresponding to retest method for physical health dimensions, psychological, social and finally, environmental health aspects are reported 0.77, 0.77, 0.75 and 0.89, respectively [20].

b) Resilience Scale:

This questionnaire, which is developed by Connor & Davidson (2003), has 25 questions and it evaluates the resiliency using Likert's five degrees' spectrum. Each expression will be scored, based on a Likert's scale (0 = completely false) to (4 = always true) and its total score lies between 0 to 100. The results obtained from studies of the psychometrics'

characteristics related to this a questionnaire in a sample of normal and the patient, has confirmed its reliability and validity [21]. In the internal normalization [21], the validity of this a questionnaire was also reported equal to 0.91 percent based on Cronbach's alpha method, and its reliability was equal to 0.89 percent.

c) Spirituality Questionnaire

This questionnaire is developed by Parsian & Dunning (2009) in order to assess the spirituality in the lives of individuals and to measure of its dimensions. This scale is a self-reporting tool and it is upon the subject to express his/her agreement or objection with each statement using Likert spectrum consisting of 4 degrees, from totally disagree with a score of 1 to totally agree with a score of 4. Spirituality questionnaire has 29 expressions. The overall alpha scale coefficient is reported to equal to 0.94. The results of the retest method do not show any meaningful difference between first order and second order score, at a distance of 10 weeks that this could be interpreted as an appropriate degree of reliability for the scale. Also, its reliability of the scale at Iranian normalization was reported 0.9, using Cronbach alpha [22]. For the structural equation model, the data were analyzed using SPSS software version 22 and Lisrel 8.7.

Results

As it is shown in Table 1, in the sub-scales corresponding to quality of life, among diabetic patients, maximum and minimum standard deviation was related to social health (62.19 (± 55.3)) and psychological health (00.16 (± 27.2)), respectively. The data relating to each of the study's variables are presented in the Table 1, separately.

Table 1. Average and Standard Deviation of data used in this study

Variable used in this study		Average	Standard Deviation
Quality of life	Psychological Health	16.0	2.27
	Physical Health	17.62	2.41
	Environmental Health	16.10	2.08
	Social Health	19.62	3.55
	Quality of life's Total score	43.04	11.56
Resilience		38.89	7.05
Spirituality		22.68	5.83

Table 2. Correlation between variables used in this study

Variables used in this study	1	2	3	4	5	6	7
1. Resilience	1.0						
2. Psychological Health	0.417**	1.0					
3. Physical Health	0.322**	0.351**	1.0				
4. Social Health	0.310**	0.416**	0.213**	1.0			
5. Environmental Health	0.302**	0.355**	0.208**	0.239**	1.0		
6. Quality of Life	0.411**	0.518**	0.363**	0.405**	0.256**	1.0	
7. Spirituality	0.437**	0.476**	0.288**	0.508**	0.457**	0.499**	1.0

$P \leq 0.01^*$; $P \leq 0.05^{**}$

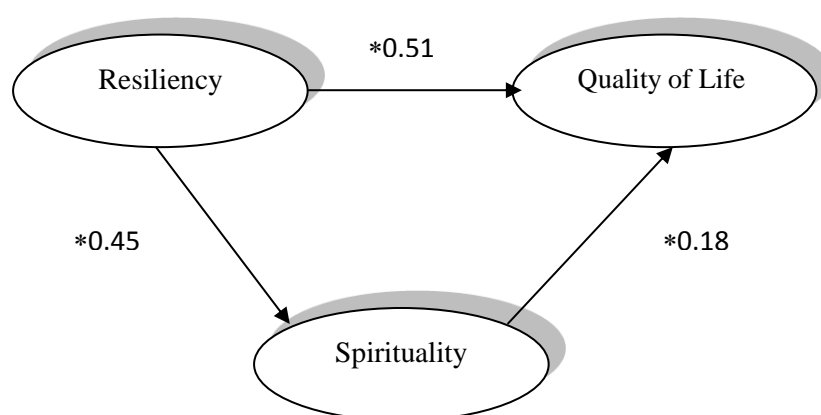
By taking a look at the correlation analysis in table 2, it can be concluded that the quality of life will increase with an increase in scores on resilience and the quality of life will increase along with an increase in scores related to model has been deployed. As it is shown in table 3, the values of the indicators of the appropriateness suggest a very good interpolation made by the model. The Kai ratio is two times greater than the degree of freedom which is equal to 2.22 and less than 3, the value of "RMSEA" is equal to 0.06 lesser than

spirituality and resiliency. In order to evaluate the relationship between the resiliency and the quality of life in a direct form, and also to investigate their relationship with intervention as the mediator variable, structural equations the determined amount, 0.08. The adaptive fit index is equal to 0.97 and Goodness of fit index is equal to 0.95 in which both of them are exceeding the allowable amount, 0.95. The path and significance level coefficients corresponding to each path are provided in table 3.

Table 3. Direct Coefficients and excitement/cognitive adjustment and Islamic Lifestyle on Cell Phone Addiction

Path	Path Coefficient	t Value	Result
Resiliency** Quality of Life	0.51*	6.48	Model Confirmation
Resiliency** Spirituality	0.45*	5.98	Model Confirmation
Spirituality** Quality of Life	0.18*	2.62	Model Confirmation
GFI= 0.95 CFI= 0.97 RMSEA= 0.06 df= 51.0 $X^2= 133.23$ $X^2/df=2.22$			

$P \leq 0.01^*$; $P \leq 0.05^{**}$



Graph 1. Final structure model of direct and indirect relationships related to the study's variables.

As it is observed in chart 1, both resilience and spirituality variables have a significant impact on the quality of life in chronic diabetic patients. The resilience with the coefficient equal to $\beta = 0.51$, has a direct impact on the quality of life. Also, The resilience with the coefficient equal to $\beta = 0.45$, has a direct impact on spirituality that through this, it also has an indirect impact on the quality of life; so the main hypothesis of the research that represents the relationship between the resilience and the quality of life has confirmed. Eventually, the results suggest that the spirituality has a direct impact on the quality of life of with the coefficient of to $\beta = 0.18$. For

the purpose of indirect relationships test through the mediator variable, the Bootstrap method has been employed that the results are presented in table 4.

Evaluation of indirect relations using the Bootstrap method show the relationship between resilience and the quality of life, regarding spirituality with a coefficient of $\beta = 0.086$, is considered as mediation, due to the fact that it did not contain either upper limit nor the lower limit equal to zero; therefore, the indirect relationship between resilience and the quality of life is significant, due to the value spirituality at the level of 0.28.

Table 4. Indirect evaluation using the Bootstrap method

Path	β	Lower limit	Upper Limit	Significance Level
Resilience \rightarrow Spirituality \rightarrow Quality of Life	0.086	0.017	0.146	0.028

Discussion

The aim of this study was to determine the role of spiritual mediation in relation to resilience and the quality of life in patients with diabetes type II. The structural model's evaluation results reveal that there is a significant relationship between the resilience and the quality of life. This finding has a good agreement with that of previous studies, including Heidari Sanglaji et al. [23], Taheri Khorram et al. [25]; Hatempour et al. [26] and Davison & Jhangri [27]. These studies have shown that there is a significant relation between the quality of life, the spirituality and high scores in resilience.

In explaining the finding of the study, it is safe to conclude that the quality of life in chronic diseases and especially diabetes, is associated with inappropriate changes, so that the majority of patients will face disorder and deficiencies in some aspects of their life, due to certain circumstances of their disease. Disorder in the quality of life has not only a negative effect on those patients' social, family, work life and recreational activities but also it increases the risk of hospitalizations caused by their disease [24]. Therefore, the quality of life comes into account as a

predictive factor of chronic disease [24]. On the other hand, the spirituality has been emphasized as an important variable on the quality of life, in recent decades, and some researchers have given consideration into the spirituality along with other dimensions of quality of life. Based on the holistic model, the human is consisted of biological, psychological, social and spiritual aspects which have to take into consideration, in a comprehensive care [25]. In fact, the spirituality is one the important factors when it comes to confronting to tense situations in life where it is out of control, it would be a useful strategy [26].

Spirituality and spiritual attitude result in maintaining and enhancing the resilience of patient, creating the sense of purpose and meaningful in the life, and increase confrontation and hope. Chronic patients are experiencing different needs in case of facing their disease that the most important of which is the spiritual needs; these patients rely heavily on spiritual aspects and intellectual confrontation is the most powerful strategy they are implementing in order to make themselves compatible with the disease [21].

When the patient believes that he/she is not alone while facing problems, even in case of the disease, they believe that there is a meaning in the disease, they will experience a sense of being efficient and capability to confront, and such power and resilience could be effective in the quality of life and a better commitment during the health care and treatment.

This research, as well as other studies in the field of behavioral science, was faced with some restrictions; including the available sampling method and data collection instruments only with the use of the questionnaire. Also, in overgeneralizing the findings to other chronic patients, as well as other forms of diabetes, it is prudent to be caution. It is recommended that other types of chronic diseases will also review and compared, in future studies. Furthermore, it is recommended that in addition to the quality of life, life satisfaction will be surveyed in these patients.

Acknowledgment

The researchers would like to thank all the respected patients who participated in this study and also, the Bahman hospital's personnel had a friendly cooperation during the implementation of this study [According to the corresponding author of this article, there is not any Conflict of interest].

References

1. Png ME, Yoong J, Tan CS, Chia KS. Excess Hospitalization Expenses Attributable to Type 2 Diabetes Mellitus in Singapore. *Value Health Reg Issues*. 2018; 15(20):106-111.
2. Ang YG, Yap CW, You AX. Lifetime cost for type 2 diabetes mellitus in Singapore. *J Diabetes*. 2018; 10(4):296-301.
3. Hakimi S, Simbar M, Ramazani & Tehrani F. Perceived concerns of azeri menopausal women in iran. *Iran Red Crescent Med J*, 2014; 16(5):1-17.
4. Mansoori F, Namdari Tabar H, Shahrezaei AR, Rezaei R, Alikhani A, Montazer MJ & et al. Diabetes mellitus in over-thirty-year old individuals in kermanshah province, 2002. *J Kermanshah University of Medical Sciences*, 2003; 21(8):57-64. (Persian)
5. Ghazi A, Landerman LR, Lien LF & Colon-Emeric CS. Impact of race on the incidence of hypoglycemia in hospitalized older adults with type 2 diabetes. *Clinical Diabetes*, 2013; 31(2):66-72.
6. Arigo D, Smyth JM, Haggerty K & Raggio GA. The social context of the relationship between glycemic control and depressive symptoms in type 2 diabetes. *Chronic Illness*, 2014; 9(4):129-42.
7. Das-Munshi J, Stewart R, Ismail K, Bebbington PE, Jenkins R & Prince MJ. Diabetes, common mental disorders, and disability: findings from the uk national psychiatric morbidity survey. *Psychosom Med*, 2007; 69(6):543-50.
8. Schmitz N, Gariépy G, Smith KJ, Clyde M, Malla A, Boyer R & et al. Recurrent subthreshold depression in type 2 diabetes: an important risk factor for poor health outcomes. *Diabetes Care*, 2014; 37(4):970-78.
9. Al-Akour N, Khader YS & Shatnawi NJ. Quality of life and associated factors among jordanian adolescents with type I diabetes mellitus. *J Diabetes Complications*, 2010; 24(1):43-47.
10. Kegler, M.C., Oman, R.F., Vesley, S.K., McLeroy, K.R., Aspy, C.B. Relationship among youth assets and neighborhood and community resources. *Journal of Health Educational & Behavior*. 2010; 32(3):380-97.
11. Geller JL. *A Common Struggle: A Personal Journey Through the Past and Future of Mental Illness and Addiction Resilience: Two Sisters and a Story of Mental Illness* by Patrick J. Kennedy and Stephen Fried; New York, Blue Ridge Press, 2015, 422 pages by Jessie Close with Pete Early and Glenn Close; New York, Grand Central, 2015, 301 pages. *Psychiatr Serv*. 2016; 67(12):1386-1387.
12. Wald HS, Haramati A, Bachner YG, Urkin J. Promoting resiliency for interprofessional faculty and senior medical students: Outcomes of a workshop using mind-body medicine and interactive reflective writing. *Med Teach*. 2016; 38(5):525-8.
13. Reed D, Reno J, Green D. Sexual Violence Among Youth in New Mexico: Risk and Resiliency Factors That Impact Behavioral Health Outcomes. *Fam Community Health*. 2016; 39(2):92-102.
14. Nicholas, J., & Robert, V.D. Self-regulation and alcohol use involvement: A latent class analysis. *Journal of Addictive Behaviors*. 2014; 39(1):146-152.
15. Hermanns N, Kulzer B, Krichbaum M, Kubiak T & Haak T. Affective and anxiety disorders in a German sample of diabetic patients:

- prevalence, comorbidity and risk factors. *Diabet Med*, 2005; 22(3):293-300.
16. Roshanfar A, Padash Z, Mokhtari S & Izadikhah Z. The effectiveness of psychotherapy training based on Frisch's theory on the quality of life of clients in Isfahan. *J Health Syst Res*, 2014; 2046-55. (Persian)
 17. Jones L, Crabb S, Turnbull D & Oxlad M. Barriers and facilitators to effective type 2 diabetes management in a rural context: A qualitative study with diabetic patients and health professionals. *J Health Psychol*, 2014; 19(3):441-53.
 18. Ellison CW. Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology* 1983; 11(4): 330-340
 19. Barton YA, Miller L. Spirituality and positive psychology go hand in hand: an investigation of multiple empirically derived profiles and related protective benefits. *J Relig Health*. 2015; 54(3):829-43.
 20. Hsiao Y-C, Chiang H-Y, Chien L-Y. An exploration of the status of spiritual health among nursing students in Taiwan. *Nurse education today*. 2010;30(5):386-92.
 21. Seligman, M., & Csikszentmihalyi, M. Positive psychology: An Introduction. *American Psychologist*. 2000; 55, 5-14.
 22. Bonomi AE, Patrick DL, Bushnell DM, Martin M. Validation of the United States Version of the World Health Organization Quality of Life instrument. *Journal of Clinical Epidemiology*. 2000; 53(1):1-12.
 23. Behrouz B, Bavali F, Heidarizadeh N, Farhadi M. The effectiveness of acceptance and commitment therapy on psychological symptoms, coping styles, and quality of life in patients with type-2 diabetes. *Journal of Health*. 2016; 7(2):3-18. (Persian)
 24. Soheylizad M, Yahaghi Amjad E, Amini D & Gholamaliev B. The relationship between self-esteem, resilience and quality of life among patients with type 2 diabetes in Hamadan. *Pajouhan scientific journal*. 2016; 15(1):1-8. (Persian)
 25. Aminayi M, Asghari Ebrahimabad MJ, Azadi M & Soltani Shal R. Reliability and validity of Farsi version of Parsian and Dunning spirituality questionnaire. *Journal of Fundamentals of Mental Health*. 2015; 5(17):129-34. (Persian)
 26. Heidari Sangelaji M, Rassouli M, Shirinabadi Farahani A, Shakeri N, Ilkhani M. Correlation between spiritual attitude and hope with quality of life in adolescents with chronic disease. *Med Ethics J*. 2016; 10(34):143-63. (Persian)
 27. Rahnavard Z, Nodeh ZH, Hatamipour KH. Congestive heart failure: Predictors of health related quality of life in Iranian women. *Hayat*. 2014; 12(1): 77-86.
 28. Taheri kharameh Z, Asayesh H, Zamanian H, Shoouri bidgoli AR, Mirgheisari A, Sharififard F. Spiritual Well-being and religious coping strategies among hemodialysis patients. *Iranian Journal of Psychiatric Nursing*. 2013; 1(1):48-54.
 29. Hatamipour KH, Rassouli M, Yaghmaie F, Zendedel K, Alavi Maj H. Spiritual needs of cancer patients: A qualitative study. *Indian Journal of Palliative Care*. 2015; 21(1):61-7.
 30. Davison S & Jhangri G. The Relationship Between Spirituality, Psychosocial Adjustment to Illness, and Health-Related Quality of Life in Patients With Advanced Chronic Kidney Disease. 2013; 45(2):170-78.