Chronic Diseases Journal

DOI: 10.22122/cdj.v6i1.248 Published by Vesnu Publications

The relationship between cognitive fusion and cognitive distortion with death anxiety in patients with diabetes mellitus

Seyfullah Aghajani[1], Hamidreza Samadifard[2]

1 Assistant Professor, Department of Psychology, School of Educational Sciences and Psychology, University of Mohaghegh Ardabili, Ardabil, Iran
2 Department of Psychology, School of Educational Sciences and Psychology, University of Mohaghegh Ardabili, Ardabil, Iran

Original Article

Abstract

BACKGROUND: Nowadays, one of the most important methods for evaluation of treatment and care in diabetes mellitus, as a chronic disease, is to assess the death anxiety. The present study aimed to determine the relationship between cognitive fusion and cognitive distortion with death anxiety in patients with diabetes mellitus.

METHODS: In this descriptive correlational study, the statistical population consisted of all patients with type 2 diabetes mellitus in Ardabil City, Iran, in year 2016. 110 patients with diabetes mellitus were selected as the statistical sample using the convenience sampling method. For data collection, the cognitive fusion scale, cognitive distortion scale, and death anxiety scale were used. Data analysis was made using Pearson correlation coefficient and multiple regression analysis at the significant level of $P < 0.050$.

RESULTS: There was a significant relationship between the cognitive fusion (0.59) and cognitive distortion (0.62) with death anxiety in patients with diabetes mellitus. Moreover, multiple regression analysis showed that cognitive fusion and cognitive distortion could predict the death anxiety among the patients with diabetes mellitus (0.48).

CONCLUSION: It can be concluded that cognitive fusion and cognitive distortion are considered among the predicting variables related to death anxiety among the patients with diabetes mellitus.

KEYWORDS: Cognition, Anxiety, Diabetes Mellitus

Date of submission: 19 Mar. 2017, *Date of acceptance:* 23 Sep. 2017

Citation: Aghajani S, Samadifard H. **The relationship between cognitive fusion and cognitive distortion with death anxiety in patients with diabetes mellitus.** Chron Dis J 2018; 6(1): 18-22.

Introduction

Diabetes mellitus is considered as a chronic and complex disease that, if not addressed, will turn into a serious problem for countries. Death anxiety includes anticipating the death of oneself, and fear of death process of important people in life.[1]

One of the factors that can affect the death anxiety among the patients with diabetes mellitus is cognitive fusion.[2] Cognitive fusion is a cognitive and social concept which confuses the person, and after a while, he/she thinks that it is the correct interpretation of his personal experiences, and it cannot be distinguished from his real experiences.[3] Cognitive fusion occurs when a person is caught in his thoughts.[4] According to results of a research, cognitive fusion is one of the effective elements in quality of life of the patients with diabetes mellitus.[2] Cognitive fusions also has a role in beginning of people's death anxiety.[5]

Another factor that can affect the death anxiety among these patients is cognitive distortion.[6] Cognitive distortions are defined as wrong arguments which play important role in the development of many psychiatric disorders; so that, most of the times, we think that are the

Corresponding Author:
Seyfullah Aghajani
Email: sf_aghajani@yahoo.com

victims of our surrounding, and external events create distress, depression, and interpersonal problems for us, and the only way to get rid of these neuroses is fixing and changing these events. Cognitive therapists believe that wrong interpretation of external events cause negative emotions. These wrong interpretations, known as "cognitive distortions or errors", come to our minds automatically.[7] According to the results of the studies, cognitive distortion is one of the effective elements in quality of life[8] and general health.[9]

The number of patients suffer from diabetes mellitus is more than 250 million in the world, and it is estimated to rise up to 350 million in 2020, and up to 438 million in 2030.[10] In Iran, the Isfahan Endocrine Research Center has estimated the prevalence of diabetes about 2 to 3 percent in the general population, and in individuals over the age of 30 years old, it is up to the 7 percent.[11] Studies show that death anxiety and its results lead to the decrease of patient's general performance and his/her psychological well-being.[12]

Diabetes mellitus is one of the chronic illnesses, and nowadays one of the most important methods for evaluation of treatment and care is to assess the death anxiety. Since death anxiety is a multidimensional structure, it can be expected to affect many aspects of life of the patients with diabetes mellitus. Thus, recognition and identification of the components that may influence the death anxiety are important. Accordingly, the present study was performed with the purpose of investigating the relationship of the cognitive fusion and cognitive distortion with the death anxiety in patients with diabetes mellitus. The study hypotheses were as "the cognitive fusion is related to the death anxiety", and "the cognitive distortion is related to the death anxiety".

Materials and Methods

The statistical society of the study included all patients with diabetes mellitus who referred to Imam Khomeini Hospital in Ardebil City, Iran, in 2016. Based on the number of study variables via Gpower software,[13] with a mean of 0.10, the alpha coefficient of 0.05, and the test power of 0.90 in the software, 110 patients were selected through convenience sampling method. The inclusion criteria of the study were as diagnosis of diabetes by the specialist physicians, having at least reading and writing skills, so that the patient can answer the scales, lack of psychiatric disorder and severe physical problems (according to the patients, themselves), and signing informed consent by the patients. The study's exclusion criterion was getting involved in other chronic and risky diseases such as cancer, or heart and lung diseases. After selecting the sample, and ensuring that this test and its obtained results merely have a research aspect and emphasizing that no name and family name are required, the scales were applied on them.

Cognitive Fusion Scale: This scale is made for measuring people's cognitive fusion with seven questions in seven-point Likert scale (from 1, it is never correct to 7, it is always correct).[2] Scores are ranged between 7 and 49. In a study, the Cronbach's alpha coefficient of this scale was reported as 0.91, and its retest reliability was 0.86, within five weeks. Moreover, the correlation coefficient between this scale and Commitment and Acceptance Scale and Southampton Mindfulness Scale were 0.72 and 0.70, respectively.[9]

Cognitive Distortion Scale: This scale has 19 items, and is scored in 5-point Likert scale (from 1, strongly disagree to 5, strongly agree). This scale has three subscales of rejection in interpersonal relationships, unrealistic expectations in relationships, and misperception (misunderstanding) in interpersonal relationships.[14] Scores are ranged between 19 and 95. Psychometric studies have reported a high psychometric quality for this scale. The reliability coefficient was obtained

0.91 for the total scale through Cronbach's Alpha. In addition, the validity was simultaneously reported 0.43 through calculating the correlation with the Spielberger State-Trait Anxiety Inventory.[15]

Death Anxiety Scale: This tool was provided by Templer in 1970 to measure death anxiety, and it has 15 questions.[16] Testers show their responses with "Yes" or "No". The marks of this scale may be between 0 and 15, which high mark indicates high anxiety of people about death. In the main process, test-retest reliability coefficient scale and its validity at the same time according to correlation with the obvious anxiety and depression scales were 0.83, 0.27, and 0.40, respectively,[16] and in Iran, reliability coefficient is reported as 0.73.[17]

Data were analyzed using Pearson correlation coefficient and multiple regression analysis using SPSS software (version 23, IBM Corporation, Armonk, NY, USA) at the significance level of $P < 0.05$.

Results

Among the participants in the study, 58 patients were men (52.7%) and 52 patients were women (47.3%). The mean age ± standard deviation (SD) of the participants was 51.34 ± 4.42. Table 1 shows other demographic characteristics of the patients.

Pearson correlation coefficient test was showed the significant and positive relationship between the predictor variables (cognitive fusion and cognitive distortion) with the dependent variable of death anxiety (Pearson coefficient = 0.59, P = 0.001, and Pearson coefficient = 0.62, P = 0.001, respectively).

The results of table 2 show that by using multiple regression, 0.48 of death anxiety among the patients is explained by predictor variables (cognitive fusion and cognitive distortion). According to predicted beta coefficients, cognitive fusion (0.35) and cognitive distortion (0.43) had significant effect on the death anxiety.

Table 1. Demographic characteristics of the participants in the study

Variable	Index	n (%)
Age (year)	30-40	16 (14.5)
	41-51	37 (33.7)
	52-62	39 (35.4)
	63 and higher	18 (16.4)
Education	Elementary school	27 (24.5)
	Guidance school	29 (26.4)
	High school	35 (31.8)
	Academic degree	19 (17.3)
Economic status	Good	29 (26.4)
	Average	57 (51.8)
	Weak	24 (21.8)

The mean ± SD of cognitive fusion, cognitive distortion, and death anxiety variables were as 25.31 ± 5.74, 46.39 ± 7.65, and 8.88 ± 3.24, respectively.
SD: Standard deviation

Discussion

The results of this study showed that there were significant correlations between variables of cognitive fusion and cognitive distortion with death anxiety among the patients with diabetes mellitus. One of the objectives of this study was to present a regression model based on the predictor variables to predict the death anxiety, and results showed that these variables can predict the death anxiety. The first part of the study showed that there was a significant relationship between cognitive fusion and death anxiety of patients. The obtained result were consistent with the results of the studies of Aqajani and Samadifard,[2] Gillanders et al,[3] Trindade and Ferreira,[4] and Samadifard and Mikaeili.[5]

Table 2. Results of Multiple regression to predict death anxiety

Variable	β	T	P	R	R^2
Cognitive fusion	0.35	4.4	0.001	0.68	0.48
Cognitive distortion	0.43	5.4	0.001		

In explaining the result, we can say that cognitive fusion is the most powerful predictor of anxiety syndrome. People with higher levels of cognitive fusion are more likely to develop anxiety.[6] In cognitive fusion, person is so impressed by his thoughts that they seem completely real; so, experience and behavior will be dominant sources of behavior regulation, and he will be less sensitive to direct results.[7]

The results also showed that there was a significant relationship between cognitive distortion and death anxiety of patients with diabetes mellitus. This result was also consistent with the results of the studies of Ellis and MacLaren[7] and Belir et al.[8] In explaining the result, cognitive distortion can have a key role in psychological parameters such as aggression, agitation, depression, and disturbed interpersonal relationships. Based on its theories and models, the structure of cognitive distortion is composed of various factors and components. These components may be related to internal and personality factors, or to social conditions and cultural grounds.[7,8]

It seems that the patients with high cognitive fusion and distortion cannot make appropriate decisions when facing with problems, and this causes the emergence of the death anxiety among them.

The present study confronted with some restrictions. This study was performed on the patients with diabetes mellitus in Ardebil City that makes it difficult to expand the results to other patients. Therefore, it is recommended to perform a similar study on these patients in other cities, and to compare the results with those of the present study. Moreover, due to some restrictions, some variables such as education, economic status, etc. were not investigated in this study; surely, examining them can help clarifying the death anxiety in patients as much as possible. From the other limitations of this study, we can refer to the use of convenience sampling method. It is suggested to use random sampling method in other researches in order to more confident expansion of the results.

Conclusion

It can be concluded that cognitive fusion and cognitive distortion are among the variables that are related to the death anxiety among the patients with diabetes mellitus, and have the ability to predict it.

It is recommended to help the patients to decrease their death anxiety through trainings for overcoming the cognitive fusion and distortion.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

Authors would like to thank all the patients who sincerely cooperated in this research.

References

1. Halici Kurtulan M, Karairmak O. Examination of the relationship among death anxiety, spirituality, religious orientation and existential anxiety. Spiritual Psychology and Counseling 2016; 1(2): 206-17.
2. Aqajani S, Samadifard HR. The role of cognitive fusion, locus of control and cognitive avoidance in the prediction of death anxiety in the elderly. Journal of Health and Care 2017; 19(1): 62-74. [In Persian].
3. Gillanders DT, Sinclair AK, MacLean M, Jardine K. Illness cognitions, cognitive fusion, avoidance and self-compassion as predictors of distress and quality of life in a heterogeneous sample of adults, after cancer. J Contextual Behav Sci 2015; 4(4): 300-11.
4. Trindade IA, Ferreira C. The impact of body image-related cognitive fusion on eating psychopathology. Eat Behav 2014; 15(1): 72-5.
5. Samadifard HR, Mikaeili N. The role of locus of control and cognitive fusion in the prediction of quality of life in diabetic patients. Pajouhan Scientific Journal 2016; 15(1): 9-18. [In Persian].
6. Rnic K, Dozois DJ, Martin RA. Cognitive distortions, humor styles, and depression. Eur J Psychol 2016; 12(3): 348-62.
7. Ellis A, MacLaren C. Rational emotive behavior

therapy: A therapist's guide. Manassas, VA: Impact Publishers; 2004.
8. Belir S, Erfani N, SafaeeRad I. Investigate the relationship between cognitive distortions and quality of life among postmenopausal women, infertility, underwent hysterectomy, uterine leiomyoma and normal. Health Research Journal 2016; 1(4): 207-14. [In Persian].
9. Samadifard H, Narimani M. The role of cognitive belief, fusion and distortion in predicting the general health of couples. J Community Health Res 2017; 6(3): 132-40. [In Persian].
10. Tsai YW, Kann NH, Tung TH, Chao YJ, Lin CJ, Chang KC, et al. Impact of subjective sleep quality on glycemic control in type 2 diabetes mellitus. Fam Pract 2012; 29(1): 30-5.
11. EydiBaygi M, Mehrabizade M, Davoudi I, Ahmadi V, Dehghanizade Z, Babaei B. Comparison the quality of life in patients with diabetes type 2 and non-diabetic individuals. J Ilam Univ Med Sci 2014; 22(5): 55-62. [In Persian].
12. Potes A, Gagnon G, Toure EH, Perreault M. Patient and clinician assessments of symptomatology changes on older adults following a psycho-educational program for depression and anxiety. Psychiatr Q 2016; 87(4): 649-62.
13. Cunningham JB, Gardner E. Power, effect and sample size using GPower: Practical issues for researchers and members of research ethics committees. Evidence Based Midwifery 2007; 5(4): 132-6.
14. Hamamci Z, Buyukozturk S. The interpersonal cognitive distortions scale: Development and psychometric characteristics. Psychol Rep 2004; 95(1): 291-303.
15. Rahmani MA, Amini N, Siratisabet Foumani Z. Investigate the relationship betweencognitive distortionsandpsychological well-being with maritaldisenchantment in couplesapplicant divorce. Journal of Educational Psychology 2015; 5(2): 29-39. [In Persian].
16. Templer DI. The construction and validation of a death anxiety scale. J Gen Psychol 1970; 82(2d Half): 165-77.
17. Rajabi GR, Bohrani M. Item factor analysis of the death anxiety scale. Journal of Psychology 2002; 5(4): 331-44. [In Persian].