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Comparison of depression, anxiety, stress, quality of life, and alexithymia between people with type II diabetes and non-diabetic counterparts

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ABSTRACT

Introduction: This study was an attempt to compare depression, anxiety, stress, quality of life, and alexithymia in people with type II diabetes and their non-diabetic counterparts.
Material and methods: The present study was a causal-comparative study which falls into the category of descriptive studies. All the people suffering from type II diabetes who referred to the clinics of Semnan in 2014 constituted the population of the study. From among the whole population, 60 patients (30 males and 30 females) were selected via randomly sampling as the participants and, then, 60 healthy subjects were selected as the control group. The following instruments were used for data collection purposes: Depression, anxiety and stress scale, Toronto Alexithymia scale, and quality of life questionnaire. Data was analyzed by SPSS software 19 version.
Results: It was indicated that there was a significant difference between the two groups in 12terms of all the variables under study.
Discussion: The results of this study showed that people with diabetes suffer from several mental disorders that make it harder for them to continue living, regardless of the numerous 15difficulties that they experience due to this chronic disease.

1. Background

Type II diabetes is a metabolic, chronic, and progressive disorder that emerge due to lack of insulin secretion or resistance to insulin (Yu et al., 2014). This condition requires ongoing medical care and self-management education to reduce its long-term risk and acute side effects (Zhao, Chen, Lin, & Signal, 2006). The International Diabetes Federation has estimated that the number of adults with diabetes in Europe in 2011 was 35 million, and it is possible that the population of these patients amounts to 43 million in 2030 (i.e., a 23%increase). From among the 25-to-64-year population in Iran, 7.7% (tantamount to 2 million people) suffer from diabetes (MalekGavgani, Poursharifi, & Aliasgarzadeh, 2010). In addition, the prevalence of diabetes is apparently increasing (Zhao et al., 2006). With the increase in diabetes prevalence, the mortality of diabetes sufferers has become a serious problem in society (Pildava, Strele, & Brigis, 2014). Chronic medical conditions are often accompanied by mental and emotional disorders (Hochung et al., 2014). People with type II diabetes are at higher risk for developing cardiovascular disease compared to healthy people, eye problems and blindness, kidney problems, and amputation. In the same way, this disease is considered as risk factor for many infectious diseases due to the immunodeficiency that creates in the body (Yu et al., 2014). However, this issue is usually ignored during primary medical care (Hochung et al., 2014). Diabetes influences people not only in biological terms but also in psychological and social terms (Van Olmen et al., 2014). In fact, particular emotional stress can be defined as a range of emotional responses living with diabetes, especially in people who need self-care or have treatment regimen (Strandberg, Graue, Wentzel-Larsen, Peyrot, & Rokne, 2014). Depression is one of the mental disorders that is associated with diabetes and a combination of genetic, biological, chemical, psychological, social, and environmental factors may contribute to this disorder. Depression is often seen representative of the fact that the main aspects of a person's life is in the balance. Many chronic and serious illnesses such as cancer and diabetes may be associated with depression (American Psychological Association, 2011).

For example, the results of the research done by Duivis, Vogelzangs, Kupper, de Jonge, and Penninx (2013) showed that greater severity of depression is positively associated with severe inflammatory diseases. Recent studies have shown that the prevalence of depression among patients with diabetes is 10% higher than that in other individuals (Hochung et al., 2014). In general, patients with chronic medical conditions are more likely to develop depression as much as twice to 3 times (Mayers, Grannemann, Linqvay, & Trivedi, 2013). Shamsaei, Cheraghi, and Allahverdipour (2006) reported the existence of a significant relationship between diabetes and 8depression.

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Anxiety disorders include those disorders that have extreme fear and anxiety, and chaotic behavior common. Anxiety is in fact the predictor of the occurrence of a threat in the future (American Psychiatric Association, 2013). Anxiety can show itself in various forms of psychiatric disorders, including anxiety, generalized anxiety disorder, phobia, obsessive-compulsive disorder, post-traumatic stress disorder, and panic (Chapman, Shuttleworth, & Huber, 2014). The relationship between anxiety and diabetes has been examined in several studies. In studies done by Chapman et al. (2014) and Kaur, Tee, Ariaratnam, Krishnapillai, and China (2013), the results showed that people with diabetic people obtained high scores on this scale.

The typical relationship between psychological stress and the clear development of diabetes in diabetic patients is controversial (Shiloah et al., 2003). Certainly, there is a stressful lifestyle accompanied by diabetes (Kaur et al., 2013). Lioyd et al. (1999) concluded that the intensity of recent stressful issues in one's life is associated with poorer glycemic control. Similarly, Kaur et al. (2013) reported the existence of a significant relationship between stress and diabetes.

Another variable that is associated with diabetes is alexithymia. Alexithymia is a multifaceted personality structure that is characterized by the difficulty identifying and describing feelings and lack of internal ideological orientation (Shishido, Gaher, & Simons, 2013). In a study conducted by Housiaux, Luminet, Van Broeck, and Dorchy (2010), the results showed that the children who have difficulty expressing their feelings to others lie at higher risk for poorer glycemic control. In addition, Lemche, Chaban, and Lemche (2014) reported a significant relationship between alexithymia and diabetes.

Quality of life is another variable that is associated with type II diabetes. Quality of life is one the most important areas that is examined in relation to human welfare. This term was originally defined by the World Health Organization as the human perception of their position in the life, culture, and value system wherein they live (Beslerova & Dzurickova, 2014). In a study done by Wahid, HussainBokhari, Butt & Ali khan (2014), the results revealed no significant difference between diabetics and non-diabetics at some of the subscales of quality of life.

The prevalence of diabetes is increasing in all societies; in addition, this diseases is correlated with high costs of health care since high costs are annually spent on treating diabetes (Zhao et al., 2006). In addition to the substantial costs of diabetes, the sufferers of this disease do not benefit from proper mental health due to the confusion they experience.

This study aimed to determine is there any significant difference between diabetics and non-diabetics in terms of depression, anxiety, stress, quality of life, and alexithymia?

2. Materials and methods

2.1. Population, sample, and sampling method

A causal-comparative research design was employed for this descriptive study. Also this research method known as “ex post facto” research. That is, diabetic patients compared to their non-diabetic counterparts. In this type of research investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals.

All the people suffering from type II diabetes who referred to the clinics of Semnan in December of 2014 through May of 2015 constituted the population of the study. By consideration of research method (causal-comparative), type I error ($\alpha = 0.05$), least difference (d), the amount of standard deviation (SD), in the GPOWER software the number of sample determined 27 for each group and each gender. However, 60 patients (30 males and 30 females) were selected via randomly sampling as the participants. That is the list of patients who were referred as a type II diabetes in Semnan clinics provided in December of 2014 through May of 2015. In order to manage ethics of research everybody who were selected as a sample filled agreement letter. Just 2 patients did not agree and excluded and substituted by other random selected patients.

2.2. Instrument

Depression, anxiety and stress scale (DASS): This questionnaire was first designed by Livibond & Livibond; this scale is a standardized questionnaire and consists of 21 questions with 3 subscales, namely depression, anxiety and stress. Each question is scored based on a 4-value Likert scale from 0 to 3 points. The reliability coefficient of this subscale was reported to be 0.7, 0.66, and 0.76 for the three subscales of depression, anxiety, and stress, respectively (AsadZandi, Sayari, Ebadi, & Sanainasab, 2011).

Toronto alexithymia scale (TAS-20): This questionnaire was constructed by Taylor in 1986.

This questionnaire is a self-report scale, each item of which is scored based on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). This questionnaire includes 20 items constituting the 3 following subscales: difficulty identifying feelings, difficulty communicating feelings, and externally orientated thinking (Besharat, Rostami, Pourhosein, & Mirzamani, 2006).

Coefficient alpha for this scale lay in the range of 0.67 to 0.87. In addition, the retest reliability of this scale after the interval of six months ranged from 0.52 to 0.61 (Fernandez-Jimenez et al., 2013). The validation of this questionnaire in Iran revealed the existence of three subscales for it (Besharat, 2008). The results pertinent to the psychometric characteristics of the questionnaire showed that the coefficient alpha for difficulty identifying feelings, difficulty communicating feelings, and externally oriented thinking were 0.85, 0.82, and 0.45, respectively, and this value for the total score of alexithymia scale was 0.72 (Besharat, 2008).

Quality of Life Questionnaire (QOL): This questionnaire is a self-report scale consisting of 26 items which evaluate 4 dimensions, namely physical health, psychological, social relationships, and life environment. For this scale, Cronbach's alpha coefficient and retest reliability coefficient ranged from 0.9 to 0.94 and 0.80 to 0.93, respectively. In addition, there is a significant correlation between this scale, EQ-5D, and SF-36, which indicates the validity of the questionnaire (Garratt et al., 2008).

3. Results

Since research method was causal-comparative, the two groups should be the same in terms of age, education, socioeconomic, and marital status. The mean and standard deviation of the age of the diabetic group were 57.82 and 10.46 years, respectively and these values 54.87 and 9.46 years for the control group, respectively. The results of independent *t*-test for the two groups show no significant difference in terms of age ($t = 1.619$, $P > 0.05$). From the diabetic group, 3 people were single, 50 people were married, and 7 people were widowed. In addition, 6 people were single, 52 people were married, and 2 people were widowed in the control group. Two variables Chi-square test (Chi-Square for independence) results indicated no significant difference between the two groups in terms of marital status ($\chi^2 = 3.817$, $P > 0.05$). From the diabetic group, 3 patients were illiterate, 12 people had passed primary school education, 23 people held diploma, and 22 people held associates degree. The illiterate of the number 2, 6 cycles, 17 Degree, Diploma and 35, respectively. As well, 2 people were illiterate, 6 people had passed primary school education, 17 people held diploma, and 35 people held associates degree. Chi-square test results indicated no significant difference between the two groups in terms of education ($\chi^2 = 6.592$, $P > 0.05$). At the end, 3 people lay in low socioeconomic class, 32 ones lay in middle socioeconomic class, and 15 ones lay in high socioeconomic class from the diabetic group. Similarly, from the control group, 7 people lay in low socioeconomic class, 42 ones lay in middle socioeconomic class, and 10 ones lay in high