

A Comparative Review of Personality Traits and Depression in Diabetic and Kidney Patients in Shadegan City

Majid Naeimavi*, Gholam Hossein Maktabi, Khalil Tofanizadeh, Hamdan Rahimi

Shahid Chamran University of Ahvaz, Ahvaz, Iran

* E-mail: mnaeimavi87@gmail.com; Tel.: +989368603910

Received for publication: 26 July 2015.

Accepted for publication: 08 October 2015.

Abstract

The current study intends to evaluate and compare the personality traits and depression in the diabetic and kidney patients in Shadegan city. The tools used in this research include Beck Depression Inventory (BDI) and Myers-Briggs Type Indicator (MBTI). The sampling method was a simple random one which was carried out on the study population including 50 diabetic and 50 kidney patients in Shadegan city who responded to the two relevant questionnaires. In addition, to analyze the data, T-test for the independent group was used. The results showed that there is a significant difference between personality traits and depression in diabetic and kidney patients. It was observed that the prevalence of personality traits and depression in diabetic patients was less than that of kidney patients.

Keywords: Personality Traits; Depression; Diabetic Patients; Kidney Patients

Introduction

It is clear that man is a creature composed of soul and body, and these two can influence each other, and are in a constant reciprocal relationship. As a result, if man's existence or its body is healthy, thus its occupying and deterrent effects on soul will be lesser, and vice versa (Mousavi, 2008). People during their life are faced with vicissitudes and may be involved in some critical crises such as physical and mental diseases. However, it is worth mentioning that such crises and damages influence people differently. Some people after dealing with pain and suffering, not only do not become depressed, angry and powerless, but also they do their best to improve the situation and progress life toward a natural condition (Condli, 2006).

Debilitating and chronic diseases have various psychiatric causes, so the outbreak of psychiatric disorders followed by physical diseases is common. Many of physical diseases have physical consequences and can lead to mental disorders including depression in man (Mousavi, 2008).

Diabetes involves a heterogeneous group of metabolic diseases characterized by chronic hyperglycemia and impaired carbohydrate metabolism, fat and protein. Such diseases are caused by defects in the secretion of insulin, effectiveness of insulin or both of them and these complications can involve all organs and body systems during their progression. The diabetes are categorized into three types including insulin-dependent type 1 diabetes, type 2 diabetes and gestational diabetes with relative prevalence rate of 10.5%, 90-95%, and 2-5% , respectively (Bertrand Russell, 2008). Criteria for the diagnosis of diabetes include symptoms of diabetes as well as random concentration of blood glucose or fasting plasma glucose. In Iran, it is estimated that more than 5 percent of the total population are afflicted with diabetes (Zare'ei, 2009).

It is so difficult to convince diabetic patients to change their life style because as they are not informed of long and short term implications of this disease, they are more susceptible to some

mood disorders such as depression. Although most of these chronic diseases are accompanied with outbreak of depression, this issue is more common three times in diabetic patients (Mousavi, 2008). On the other hand, the people who are afflicted with diabetics or hypertension are more susceptible to kidney diseases, and nowadays almost one third of the patients with diabetics become afflicted with kidney disease.

In addition, the depression, as a reaction to real or imaginative losses such as loss of job, income, energy, physical stamina, life expectancy, etc. is the most common psychological problem among dialysis patients (Bahmani, 2008). In addition, the statistics have shown that the depression reduces people's patience for diet control, tuning of physical activities, regular visits to the doctor and observance of other treatment principles, and leads to lack of cooperation on the implementation of remedial measures (Hoseini, 1994).

In the recent years, many studies have been conducted to recognize risky factors of important non-contagious diseases. Among these diseases is diabetes mellitus as the most common endocrine disease. Specialists practicing in the area of endocrine diseases regard diabetes as one of the most common metabolic diseases in the present century which can lead to disability and premature death, and its acute and late complications are a major threat to health of people. If blood sugar is not controlled, diabetic person would be afflicted with cardiovascular diseases, renal diseases, nerve disease or diabetic neuropathy. Moreover, eye disease and even blindness are the most frequent complications of diabetes (Russell, 2008).

One of the diseases that people in many parts of the world cope with it is kidney diseases. In case of being afflicted with such disease, since the onset of the disease patients should be held under treatment constantly and regularly, and when there is no medication available to cure them, renal transplantation remains the only way for the survival of these patients. Nowadays, there are 15000 dialysis patients who perform dialysis for the continuation of their life three times in a week, and 17% is added to this population annually. Most of people in the community are not informed of their acute kidney disease, while they can easily detect such gripping disease and change such challenging direction just by a blood test. Annual mortality rates of dialysis patients in developed countries is over 20%, while the figure in Iran is less than 16%, which is mainly due to the high age of the dialysis recipients. Final stage of renal disease is a debilitating disease that on its way can cause some alterations in various aspects of patients' public and mental health (Ashkani, Dehbozorgi and Soul, 2002).

Both personality theories and the research carried out suggest that personality could play a major role in certain diseases. There are few studies that have studied some characteristics related to the dissociation or emotional instability including schizoid personality disorder (Haji Seyed Abu Torabi, 1997) and borderline personality disorder (Lin et al., 2000) in diabetic patients and have reported that these characteristics in this group of patients are higher than normal control group or other patients. However, no research can be found regarding the relationship between personality dimensions and diabetes type 2.

However, the existing research has underlined the role of personality variables and personality dimensions in the control of diabetes. In these studies, low levels of blood glucose control as an indicator of lack of success in care programs designed for diabetic patients have been taken into account, and it has been found that there is an association between poorly controlled blood sugar with low levels of neuroticism and high levels of altruism and self-critical behaviors (Lane and et al., 2000).

In explaining their results, these researchers expressed that altruist persons neglect their own needs because they are more concerned about the needs of others, friends and family, while negative

feelings of the people with high levels of neuroticism causes concerns which can significantly raise blood sugar and inability to provide self-care.

Esmailpour, Soudmand and Nazari (2011) in a study investigated the role of personality dimensions and coping strategies in the patients with type2 diabetes and non-diabetic people. The results indicated that there is a significant difference between these two groups in terms personality dimensions and stress coping strategies, and diagnostic function resulted from the linear combination of coping strategies and personality dimensions can explain 87.9% of the difference between the people with type2 diabetes and non-diabetic people. In a research performed by Masoudi Alavi, Sharifi and Akbarzadeh (2007), the extent of anxiety and depression in the patients under treatment by renal replacement methods in Kashan city was examined. The research results were indicative of the high rate of prevalence of depression and anxiety in kidney replacement patients, especially dialysis patients. Norouzinejad, Boustani, Ne'ematpour and Behrouzian (2006) in a research entitled "A comparison of diabetic patients and non-diabetics" stated that the prevalence of depression among diabetic people was significantly higher than that of non-diabetic people. In addition, there is a significant difference between depression and type of diabetes, and also between depression and type of treatment with insulin. Therefore, psychiatric analysis and counseling of this group of patients for early diagnosis and timely treatment play an essential role. Ranjbar Sharif and Dej Bakhsh (2006) in a research entitled "A comparison of frequency and intensity of depression in the diabetic patients who consumer tablet and insulin" stated that the prevalence of diabetics, acute or chronic complications and the first relevant experiences are some of the causes that can involve a patient with a broad range of mental and emotional problems including depression. This issue necessitates psychotherapy along with medication therapy for diabetic patients. Rezaei Kargar, Karbandi, Hasan Abadi and Esmaeili (2005) in a study on the role of personality dimensions in diabetic patients indicated that there is a negative yet non-significant association between neuroticism and compliance with the treatment recommended regimes, while this relationship was positive and significant in terms of extroversion. Sepehrmaneh, Sarmast, Sadr and Sarbolouki (2003) in a research entitled "A study of the prevalence of depression and its pertinent causes in diabetic people" stated that depression is a mental disorder that is highly associated with diabetes mellitus. Diabetic patients are required to control the blood regularly, and a depressed mood can influence patients' behavior and motivation and even their self-care. The very issue indicates the necessity of psychiatric counseling for this group of patients. In a research performed by Zareh Hesabi (1994), it was indicated that the average score of anxiety, depression, aggression and shyness in diabetic adolescents was higher than those of healthy adolescents, and the afflicted ones have more difficulty in dealing with their families. With the aim of studying the effects of cognitive-behavioral group-therapy on depression in dialysis patients, De'art (2009) in a study in Brazil showed that the group therapy can enhance the quality of life of patients with depression, improve sleep and increase the quality of their social interactions, and also the scores obtained from Beck Test significantly will be reduced after the intervention compared to before. Perez et al (2008), in a study showed that rate of depression and anxiety in kidney transplant patients after one year from the time of transplantation was higher than before. Virzy (2007) in a research carried out in Italy showed that a month after the transplant, the symptoms of depression in patients reduced from 45.8% to 32%, and severe depression fell from 16.4% to zero. Anxiety did not change significantly. In the patients, pain was reduced, and a considerable improvement was seen in their social activity and feeling of physical and mental health. Leonel and Erin (2007) in a study determined that denial, anger, lack of admittance of illness in these patients was accompanied by reducing the orientation toward the future and therefore less control over diabetes. Pollock, Barzyo and Davis (2005) in their research evaluated the role of personality aspects in diabetic patients, and

found that neurotic perfectionism can predict eating disorders in people with diabetes. Lane (2004), in examining the reciprocal guidance relationship between emotional health and diabetes showed that diabetes with high risk is associated with cognitive and physical deterioration, failure and depression. With the aim of examining attitudes and thoughts associated with the disease, Vinter et al (2004) examined the obstacles which patient with type2 diabetes meet while adhering to the therapeutic regimen in everyday life. They stated that some of the main causes of non-adherence of diabetic patients to treatment regimens recommended include the extent of acceptance of the disease by patient, their attitude to their future life and social background, frustration with diabetes control and a belief in the continuing progression of diabetes despite adherence to treatment regimes.

The present research mainly aims to compare personality traits and depression in diabetic and renal patients in Shadegan city.

Based on this objective, the following hypotheses are formulated:

- 1- There is a significant difference between personality and depression of diabetic patients
- 2- There is a significant difference between personality and depression of kidney patients
- 3- There is a significant difference between personality and depression of diabetic and kidney patients

Methodology

This study is of a causal and post-occurrence type. The purpose of this research is to find the possible causes of a behavioral pattern. This method is also often called ex post facto, because it refers to cases in which the cause has been occurred before, and their study is done based on the effects exerted on another variable. The study population included all diabetic and renal patients in Shadegan city in 2014. In this study, a sample of 100 patients was selected by a simple random sampling.

In order to measure the variables under study, the following tools are applied:

A) Myers-Briggs Type Indicator (MBTI)

B) Beck Depression Questionnaire

MBTI is a tool for measuring the personality which is able to determine the desires and tendencies of the individual, and the results show valuable differences between normal and healthy people. This tool enables people to be aware of their specific inner world, motives, abilities and potentials. This tool is extensively used in different areas including self-awareness, stress management, group formation, organization development, couple therapy, understanding learning styles and preferred communication styles (Kennedy, 2004).

Two basic concepts in MBTI include Extroversion-Introversion (EI) and perception-judgment (PJ). This theory considers people's understanding of their environment and then makes decisions about their observation. In fact, this theory is related to the way that people view their world and shall adopt decisions on the basis of it. There are two modes of perception and judgment. Two contradictory ways of perception include sensory and intuitive. Sensory perception means receiving information using the auditory, tactile, tasting and olfactory processes. In contrast, the intuitive perception can reach beyond sensory processes. Those who prefer the sense, basically give priority to observation through the senses. Two different ways of judgment include emotional and rational. The former is a mental reaction and often in connection with one's own values. The latter is an objective analysis of an idea or event observed. In the next step, two perception methods namely sensory and intuitive, and two judgment methods, emotional and rational are mixed with each other and create four binary combinations. People who take advantage of rational and intuitive potentials

to understand the events are very different from those who mainly use intuition and emotion (feeling). In the final stage, each of the four binary combinations along with the basic concepts of Myers-Briggs Theory, i.e. the extraversion-introversion and perception-judgment are combined and form sixteen four-fold types. In other words, one time extroversion and perception, then extroversion and judgment, and finally introversion and judgment are placed along with this binary combination. In this way, sixteen four-fold types are formed (Hosseiniyan, 2001). In Iran, Abdollahi (1999) standardized MBTI and he was able to obtain form G relevant to 513 teachers in Mashhad city and also validity coefficient between MBTI and Eysenck personality questionnaire (0.64), Cronbach's alpha coefficient of scale EI (0.63), SN scale (0.70), TF Scale (74%) and JP scale (0.78). Badaye'h (2004) reported the satisfactory level of the content validity of the MBTI based on the expertise views of Shamloo, Pasha Sharifi, Moradi, Abedin, Jazayeri, Dolatshahi and Hosseini. As well, in his research results, Cronbach's alpha coefficient of MBTI in a sample of 30 people for perceptual preference (P) is reported as 0.85. In the current research, to determine the reliability of MBTI Questionnaire, Cronbach's alpha was used, which is 0.86 for the entire questionnaire, indicating an acceptable reliability coefficient for the questionnaire. In the current research, to determine the validity of MBTI questionnaire, the criterion questions were used, and the validity coefficient was 0.72, which was significant at $p < 0.001$. Beck depression questionnaire (BDI) is one of the most appropriate instruments for the reflection of depression states. This questionnaire has 21 items measuring physical, behavioral and cognitive symptoms relevant to depression. Each item has 4 options which is scored from 0 to 3, and determine different degrees of depression ranging from mild to severe. The maximum score on the test is 63 and the minimum is zero. 21 items of Beck's Depression Inventory are as follows: sadness, pessimism, sense of failure, dissatisfaction, guilt, expectation of punishment, dislike of self, self-accusation, suicidal ideation, crying, irritability, social withdrawal, indecisiveness, imagine the physical change, hard work, insomnia, boredom, change in appetite, weight loss, mental preoccupation, and sexual disinterest. Beck Depression Questionnaire was used by some authors such as Nourbala and Shaddel (1994). Rajabi et al (2001) reported that Cronbach's alpha coefficient for the questionnaire is 0.87, split-half validity coefficient is 0.83 and re-test coefficient for an interval of three weeks is 0.49. In the current research, to determine the reliability of Beck Questionnaire, Cronbach's alpha was used which is 0.76 for the entire questionnaire, indicating an acceptable level of reliability coefficient of the questionnaire. In the present research, to determine the validity of Beck Depression Questionnaire, criterion questions were used, and the validity coefficient was 0.64 and it was significant at $p < 0.001$.

Data Analysis Methods

In the present research, the significance level is considered $p < 0.05$. Also, to perform data analysis, SPSS Software (version 18) and the following statistical methods are used:

- 1- Cronbach's alpha, reliability determination method, and confirmatory factor analysis to determine the tools' validity
- 2- Descriptive statistics methods (such as mean, standard deviation, minimum and maximum) for data preliminary analysis.
- 3- Inferential statistics methods including t test

Findings

Out of 100 patients participating in the research, 50 (50%) are diabetic, and 50 (50%) are kidney patients. The frequency and percentage are presented in Table 1.

Table 1: The distribution of the subjects in terms of illness situation

Situation	Frequency	Percent
Diabetic Patient	50	50
Kidney Patient	50	50
Total	100	100

Table 2 shows mean, standard deviation, minimum and maximum scores relevant to depression and personality traits of diabetic and kidney patients.

Table 2: Mean, standard deviation, minimum and maximum scores relevant to depression and personality characteristics of diabetic and kidney patients.

Variable	Patient s	Mean	Standard Deviation	Minimum	Maximum
Depression	Diabetic	33	4.26	25	44
	Kidney	32	3.60	23	39
Personality Traits	Diabetic	164	14.08	193	133
	Kidney	162	12.68	192	134

Hypothesis 1: Therefore, there is a significant difference between personality and depression of diabetic patients.

Hypothesis 2: Therefore, there is a significant difference between personality and depression of kidney patients.

Hypothesis 3: Therefore, there is a significant difference between personality and depression of diabetic and kidney patients.

In order to examine the above hypothesis, T Analysis is used which the relevant results are shown in Tables 3, 4 and 5.

Table 3: T Test of Personality and Depression of Diabetic Patients

Tested Variable	T Value	Degree of Freedom	Significance Level	Confidence Interval 95%	
				High	Low
Personality	48.59	49	0.001	28.92	26.63
Depression	54.35	49	0.001	24.43	22.68

Based on Table 3, the results from the t test between personality and depression of the diabetic patients is significant at 0.05. So the first hypothesis is confirmed. Therefore, there is a significant difference between personality and depression of diabetic patients.

Table 4: T Test of Personality and Depression of Kidney Patients

Tested Variable	T Value	Degree of Freedom	Significance Level	Confidence Interval 95%	
				High	Low
Personality	56.29	49	0.001	92.02	27.01
Depression	46.20	49	0.001	21.16	19.39

Based on Table 4, the results from the t test between personality and depression of the kidney patients is significant at 0.05. So the second hypothesis is confirmed. Therefore, there is a significant difference between personality and depression of kidney patients.

Table 5: T Test of Personality and Depression of Kidney and Diabetic Patients

Tested Variable	T Value	Degree of Freedom	Significance Level	Confidence Interval 95%	
				High	Low
Personality	73.95	99	0.001	28.64	27.15
Depression	62.92	99	0.001	22.61	21.22

Based on Table 5, the results from the t test between personality and depression of the diabetic and kidney patients is significant at 0.05. So the third hypothesis is confirmed. Therefore, there is a significant difference between personality and depression of diabetic and kidney patients.

Discussion and conclusion

The results of the current study showed that there is a significant positive relationship between personality and depression of kidney and diabetic patients at the level 0.05. Regarding personality traits, there is a consistency between the results of the present study and those of Rezaei Kargar, Krabandi, Hasan Abadi and Esmaeili (2005), and Esmaeilpour, Soudmand, Nazari (2011) and Shafiei, Javidi and Kazemi (2011), Palok, Barzyo and Davis (2005). Also, in terms of depression, there is a consistency between the results of the present study and those of Nourouzinejad, Boustani, Ne'matpour and Behrouzian (2006), Masoudi Alavi, Sharifi and Akbarzadeh (2008), Lastman (2000), Zento (2002), Perez et al (2008). By creating some alterations in people's lifestyle, depression can have a negative impact on diabetes management by patients. Therefore, the recognition of the symptoms of depression is of utmost significance. In fact, being genetically prone to develop depression and certain conditions of diabetics doubly puts people at risk for depression. Depression is one of the most common and important psychiatric disorders in dialysis patients that could adversely impact the course of the disease and the treatment. In addition, the depression is recognized as an independent risk factor in mortality of hemodialysis patients, and according to the research carried out by psychologists it could be conclude that the people with the personality traits of extraversion-introversion, sensory- intuitive, rational-emotional, and observation-discipline have the potential to predict depression. The final stage of renal disease is a debilitating disease that on its way can bring about some changes in various aspects of public and mental health of patients (Ashkani, Deh Bozorgi and Shoul 2002). Many types of diseases, especially chronic and debilitating illnesses have numerous psychiatric consequences. As a result, the incidence of psychiatric disorders followed by the prevalence of physical problems is highly common (Sadok, 1994).

References

- Ashkani, H., Dehbozorgi, Gh., Shoul, F. (2002). A study of mental damages in the patients with renal transplantation before and after surgery; Research Journal of Shahid Beheshti University: Department of Medicine; 26(3), 159-162
- Bahmani, N., (2007). A study of depression in the patients under hemodialysis treatment in hiraz city; MA thesis of Clinical Psychology; Fars Research and Sciences University

- Cecil, B. R., (2008); Cecil Essentials of Internal Medicine; translated by Mohsen Arjmand (2008); 1st ed., Tehran; Arjmand Publications
- Condly.s.J. (2006). Resilience in children: a review of literature with implications for education. *Urban education*, 41(3), 211-239.
- Duarte, PS, Miyazaki MC, Blay SL, Sesso R. (2009) Cognitive-Behavioral Group Therapy Is an Effective Treatment for Major Depression in Hemodialysis Patients. *Kidney Int*; 76(4), 414-21.
- Esmailpour, Kh., Soudmand, M., Nazari, M. S., (2011). The role of personality aspects and coping strategies in the patients with diabetes Type 2; *Quarterly of Modern Psychological Research*; 6(21); 172-188
- Fabienne, Dablez., Melissa, A, Skeans, J, Snyder, AV. (2008). Depressive disorder in renal transplantation: An analysis of medicare claims. *Am J Kidney Dis*. 51(5), 819-28.
- Haji Seyed Aboutorabi, M. M., (1997). Personality analysis of diabetic patients dependent upon insulin referring to Amini Health & Treatment Center; Medicine Doctorate Dissertation; Qazvin Medical Sciences University
- Hosaini, J., (1994). A study of depression among the patients with diabetes Type 2; Amol treatment and educational center; Medicine Master Dissertation; Iran Medical University; Tehran Psychiatry Institute
- Hosainian, S., (2003); An introduction to Inventory Myers-Briggs Type Indicator (MBTI) and its application to counseling relationships and professional decision making; a report presented by Second Seminar of Iran Counseling Association, p. 6
- Kennedy, R. B. & Kennedy, D. A. (2004). Using the MyersBriggs type indicator in career counseling, *Journal of Employment Counseling*, 41, 3844
- Lane, J.D. McCaskill, C.C., Williams, P.G., Parekh, P.I., Feinglos, M.N. & Surwit, R.S., (2000). Personality Correlates of Glycemic Control in Type2 Diabetes, *Diabetes Care*, 23(9), 1321-1325.
- Lin, E. H., Korf, M., Simon, G. F., Ciechanowski, P, & Bush., (2004). relationship of Depression and Diabetes self care, Medication Adherence, and prevention care. *Diabetes care*, 27, 2154-2160.
- Livnel, H.C. A & Erin, M. B. (2007). Reactions to diabetes and their relationship to time orientation. *International journal of rehabilitation Research*. 30 (2):127-136
- Masoudi Alavi, N., Sharifi, Kh., Ali Akbarzadeh, Z., (2008). Depression and anxiety among the patient under treatment and renal displacement methods in 2006-2007; *Faiz Quarterly*; 4, 46-51
- Mayers Briggs, I., (2003); An introduction to 16-fold personality types; translated by Morteza Zarrabi; (2003); Fardanesh Pajouhan Publications
- Mofid, A. R., (2009). A complete guide to diabetes; 2nd ed., Tehran; Osaneh Publications
- Mousavi, A., Aghayan, Sh., Razavianrad, N., Norouzi, N., Khosravi, A. (2008); A study of depression and public health in the patients with diabetes Type II; *Journal of Knowledge and Health*; 1; 44-48
- Norouzinejad, Gh. H., Boustani, H; Ne'matpour, S., Behrouzian, F; (2006); A comparison of depression in diabetic and non-diabetic people; *Scientific Journal of Medicine*, Ahvaz University; 1, 385-391
- Nourbala, A. A., Fakhraei, S., A., (2001); A study of the frequency of psychiatric symptoms in the students of last year of medicine and other fields; University of Tehran; *Journal of Thinking and Behavior*; 7(3); 30-37

- Perez San-Gregorio M, Martin-Rodriguez O. (2008). Influence of the psychological state of relatives on the quality of life of patients at 1 year after transplantation. *Transplant Proc.* 40, 3109-11.
- Pollock-BarZiv, S.M., Davis, C., (2005). Personality Factors and Disordered Eating in Young Women with Type 1 Diabetes Mellitus, *Psychosomatics*, 46, 11-18.
- Ranjbar, Kh., Sharif, F., Dejbakhsh, T., (2006); A comparison of frequency and intensity of depression among diabetic patients as consumers of tablet and insulin; *Hormozgan Medical Journal*; 4, 363-369
- Rezaei Kargar, F., Karbandi, S., Hasan Abadi, H., Esmaeili, H., (2005); the type of personality and observance of treatment regimes recommended in diabetic patients; *Quarterly of Psychiatry and Clinical Psychology in Iran*; 4, 441-448
- Sadok, B., (1994); *Summary of psychiatry*; translated by Nosratollah Pour Afkari; 1994; 2nd edition; Azadeh Publications
- Sepehrmanesh, Z., Sarmast, H; Sadr, F., Sarbolouki, Sh., (2013); A study of the prevalence and type of depression and its relevant factors in diabetic persons; *Faiz Scientific-research Quarterly*; 27, 69-75
- Vinter, N. R., Petricek, G., Katic, M. (2004). Obstacles which patient with type2 diabetes meet while adhering to the therapeutic regimen in everyday life; qualitative study. *Creation Medical Journal*, 45, 630-636.
- Zareh, H., (1994); A study of the social-mental problems relevant to diabetic adolescents and its comparison with non-diabetic adolescents in Tehran; *Master Thesis*; Shahid Beheshti University, Department of Medicine; University of Psychology and Humanities