

Association between Mindfulness with Depression and Anxiety in Patients with Diabetes in Gorgan

Gorgan'da Diyabetli Hastalarda Depresyon Farkındalığı ve Kaygı Arasındaki İlişki

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ABSTRACT

Introduction: This research was aimed to seek the association between mindfulness with depression and anxiety in patients with diabetes attended to diabetes ward in 5Azar hospital in Gorgan city.

Method: A cross-sectional survey was done on 323 patients with diabetes attended to diabetes ward of 5Azar hospital in Gorgan city that were selected using convenient sampling and Krejcie and Morgan table. The current instruments were included mindfulness questionnaire, Beck Anxiety and Depression Scale and demographic questionnaire. To analysis, software (version 20), and inferential statistical test such as spearman correlation coefficient, independent t-test and Mann-Whitney were utilized.

Results: Stated that most patients (82%) were married, and 76.8 % were unemployed. There were negative and significant correlation between mindfulness and depression ($r = -0.51, p=0.001$) and between mindfulness and anxiety ($r=-0.72, p=0.001$). In addition, gender was remarkably associated with depression and anxiety ($p=0.045$).

Conclusion: Medical and psychiatric counseling for early detection, developing programs related to prevention and promotion of diabetes, and also psychological training particularly mindfulness appeared to be likely useful.

Key Words: Anxiety, depression, diabetes mellitus, mindfulness

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ÖZET

Amaç: Bu araştırmanın amacı, Gorgan kentindeki 5Azar hastanesinde diyabet kliniğindeki diyabetli hastalarda depresyon ile anksiyetenin farkındalığı arasındaki ilişkiyi araştırmaktır.

Yöntem: Gorgan kentinde 5Azar hastanesinin diyabetine, uygun örnekleme ve Krejcie ve Morgan tablosu kullanılarak seçilen diyabetli 323 hasta üzerinde kesitsel bir anket yapıldı. Mevcut araçlar farkındalık anketi, Beck Anksiyete ve Depresyon Ölçeği ve demografik anket dahil edildi. Analiz için, yazılım (versiyon 20) ve spearman korelasyon katsayısı, bağımsız t-testi ve Mann - Whitney gibi çıkarımsal istatistiksel test kullanılmıştır.

Bulgular: Hastaların çoğunun (% 82) evli ve % 76,8'inin işsiz olduğunu belirtti. Farkındalık ile depresyon arasında ($r = -0.51, p = 0.001$) ve farkındalık ile anksiyete arasında ($r = -0.72, p = 0.001$) negatif ve anlamlı bir ilişki vardı. Ayrıca cinsiyet, depresyon ve anksiyete ile belirgin şekilde ilişkiliydi ($p = 0.045$).

Sonuç: Erken tanı için tıbbi ve psikiyatrik danışmanlık, diyabetin önlenmesi ve teşviki ile ilgili programlar geliştirilmesi ve ayrıca özellikle dikkatli olmada psikolojik eğitimin yararlı olabileceği ortaya çıktı.

Anahtar Sözcükler: Anksiyete, depresyon, diabetes mellitus, farkındalık

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Diabetes causes debilitating and life-threatening problems that constitutes negative impact on the welfare of patients and their social life. This disease affects the lives of millions of people and also is considered as a major cause of death across the world (1). Populations of 120-100 million people live with diabetes worldwide. Given the available statistics, the prevalence of diabetes is 2.8 percent and 1.2 percent in the urban and in the rural areas, accordingly (2).

The nature of the disease and its complications not only imposes the economic burden but also reduces the quality of life of patients and their families such that it has been reported that the health care costs for a person with diabetes is 6.4 times compared to a non-diabetic person, approximately (3). Diabetes reduces quality of life in all areas of life such that it risks the physical performance (complications), psychological state (depression) and social functioning (incompatible) of patients (4).

Mindfulness means paying attention to the present in a particular manner, objectively and without judgment (5). Mindfulness-based stress reduction is one of the techniques that widely uses in mind-body perspective for teaching individuals to focus on thoughts, behavior, feelings and the present events and without judgment using diaphragmatic breathing (6), also controls them, and in final, releases from routine mind that focused on past and future (7).

Mindfulness-based interventions have been utilized as a variety of non-drug therapies in the treatment of many psychiatric disorders. Aforementioned treatment benefits from the reduced drug consumption and side effects; moreover, more people with depression or anxiety can be likely treated due to time and cost saving process (8). One of the cognitive therapies that its long-term positive results in reducing emotional distress (including depression and anxiety), and a variety of chronic diseases such as diabetes has been confirmed is mindfulness, especially mindfulness-based stress reduction (9). At present, we sought to explore the association between mindfulness with depression and anxiety in patients with diabetes attended to diabetes ward in 5Azar hospital in Gorgan city.

METHODS

A cross-sectional survey was conducted on 323 patients with diabetes who attended to 5 Azar hospital located in Gorgan city of Iran in 2016 (Grant num: 942351). Prior to survey, the current study was approved by the Research Council of Golestan University of Medical Sciences. Also, all patients were provided with necessary information in terms of study process; furthermore, informed consent form was obtained from all participants in the survey. Moreover, questionnaires were completed in the presence of researcher.

Inclusion criteria were as follow: patients with diabetes diagnosed by a physician, having literacy to read and write, aged 20 to 50 years, having healthy vision and hearing ability. In addition, subjects with criteria as being illiterate, not having major surgery, psychotic disorder, history of hospitalization in the psychiatric ward as well as no history of participation in the yoga and mindfulness sessions were not included in the study.

Total patients of 2000 were existed in the Gorgan city. Since, there was no a list of patients name; therefore, convenient sampling technique was utilized and 323 patients were selected using Krejcie and Morgan table.

To collect data, questionnaires of mindfulness, Depression Inventory and Beck anxiety questionnaire as well as patient sheet (including age, gender, marital status, education, occupation, duration, etc) were employed.

Mindfulness is a self-report questionnaire that consisted of a 39-item scale developed by Bauer et al in which participants must response in a 5-point Likert scale (from 1=never to 5= mostly) ranged 39 to 195 scores. The validity and reliability of the questionnaire were confirmed in the Iranian society (10). Beck Depression and anxiety Inventory comprised of 21 items in the form of 4-point Likert scale. The validity and reliability of two aforementioned instruments were approved in the Iranian population, as well (11, 12).

Mean, standard deviation and frequency of variables study were described in the form of tables and graphs. To analyze, inferential statistics such as spearman correlation coefficient, linear regression model, independent t-test and Mann-Whitney test were used through SPSS statistical software (version 20). The significant level was considered as $p < 0.05$.

RESULTS

According to findings, 65% and 35% of respondents were female and male, respectively. Additionally, more than 85 % of patients aged over 40 years. The vast majority of patients 94.1 % suffered from type 2 diabetes. Also, most complication 31% caused by diabetes was eye complications (table 1). Men with an average of 124.68 had higher mindfulness compared to women with an average of 122.14. However, women (13.66) more suffered from depression than men (11.66). In a same way, women (43.89) were more anxious compared to men (39.53). The total score of patients also stated that mindfulness of subjects was higher than average (123.03), while their depression (12.96) and anxiety (42.37) were moderate.

Pearson correlation coefficient revealed a negative and remarkable association between mindfulness and depression of patients ($p=0.001$, $r= -0.51$). After standardization, linear regression model showed that lack of judgment and observations were the strongest predictors of depression in patients with diabetes (table 2).

Given the Spearman correlation coefficient, there was a significant negative between mindfulness and anxiety of patients ($p=0.001$, $r= -0.72$). Besides, after standardization, linear regression model found observation, inaction, lack of judgment and act with awareness were strongest predictors of anxiety of patients (table 3). Independent t-test indicated a no meaningful differences in mindfulness according to gender ($p=0.079$).

To compare anxiety and depression in diabetic patients based on gender; Mann-Whitney test was used that cited a significant relationship between mindfulness with depression ($p=0.045$) and anxiety ($p= 0.001$) (table 4).

Table 1. Demographic characteristics of patients of the study

Variables	Frequency	Percent	
Age	20-25	4	1.2
	25-40	44	13.6
	40 <	275	85.1
Gender	Male	113	35
	Female	210	65
Job	With income	75	23.2
	Without income	248	76.8
	Illiterate	110	34.1
Education status	Under diploma	142	44
	Diploma	24	7.4
	Associate Degree	10	3.1
	Bachelor	27	8.4
	Graduate level	10	3.1
Marital status	Single	3	0.9
	Married	267	82.7
	Divorced	5	1.5
Type of diabetes	Widow	48	14.9
	Type 1	19	5.9
	Type 2	304	94.1
Duration of diabetes	1>	48	14.9
	1 to 5 years	107	33.1
	5<	168	52
Duration of treatment	1>	57	17.6
	1 to 5 years	111	34.4
	5<	155	48

Table 2. Subscales of mindfulness in predicting depression of patients with diabetes

Variables	Un-standardized coefficients		Standardized coefficients Beta	t	P-value
	B	Standard error			
Constant	61.994	4.854		12.773	0.001
Observation	-0.435	0.201	-0.134	-2.163	0.031
Description	-0.350	0.271	-0.094	-1.292	0.197
Act with awareness	-0.329	0.189	-0.115	-1.740	0.083
Lack of judgment	-.0564	0.214	-0.185	-2.635	0.009
Inaction	-.0326	0.180	-0.117	-1.814	0.071

Table 3. Subscales of mindfulness in predicting anxiety of patients with diabetes

Variables	Un-standardized coefficients		Standardized coefficients Beta	t	P-value
	B	Standard error			
Constant	136.602	8.867		23.284	0.001
Observation	-1.159	0.243	-0.249	-4.766	0.001
Description	-.0597	0.328	-0.111	-1.821	0.069
Act with awareness	-0.535	0.229	-0.131	-2.337	0.020
Lack of judgment	-0.764	0.259	-0.175	-2.950	0.003
Inaction	-0.813	0.217	-0.203	-3.741	0.001

Table 4. Comparison of anxiety and depression in patients with diabetes based on gender

Variables	Mann- Whitney U	Z	P-value
Depression	10259	-2.008	0.045
Anxiety	9188.500	-3.345	0.001

DISCUSSION

The prevalence of mental disorders is more common in those with less education (13). Thus, group education of problem-solving skills such as mindfulness can be helpful. Rumination is an attempt to resolve problematic emotions through the process of analysis and problem solving.

The present results revealed that patients with diabetes had higher than average of mindfulness and also suffered from moderate depression. In addition, there was a negative significant association between mindfulness and depression that is in accordance with other explorations (14-16) indicating remarkable effects of mindfulness-based intervention therapy on reducing symptoms of depression. In fact, subject with higher mindfulness presented less anxiety. To justify, mindfulness can protect the individual against stress-related bad mood by increasing cognitive coping processes such as positive reappraisal, strengthen emotion regulation skills and distress tolerance. Furthermore, mindfulness forms an attention without judgment and also increases awareness of the patients toward mental and physical feelings, and in brief, it helps to accept the emotions and physical phenomena as it happens.

In line with other studies (17, 18), the current findings stated a statistical significant difference between males and females in terms of depression such that women were more depressed. To explain, women are emotionally more sensitive and cannot fully accept their disease; then, they spend life with its related concerns, in final, they might be likely at higher risk of depression (19).

Given the present results, there was a meaningful association between male and female patients about anxiety in the way that women experienced more anxiety that is in line with Ranjbar et al survey (17). As, women are emotionally more vulnerable and have less tolerance to cope with stress, and also are less able to regulate their emotions; therefore, they can be more influenced by their emotions and it makes them to be more dependent to family, friends and society, emotionally.

CONCLUSION

Medical and psychiatric consultation for early diagnosis and planning related to prevention and healing of patients with diabetes with the aim of regulating of depression and anxiety as well as psychological training especially mindfulness appeared to be likely beneficial.

Conflict of interest

No conflict of interest was declared by the authors.

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