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An Exploration of Coping Styles in Type 2 Diabetic Patients and their Association with Demographic Factors

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Abstract

Aim: Diabetes mellitus and the patients' need for self-care may bring several challenges in the daily life of diabetic patients. This necessitates the obligation to adopt coping strategies against stress in order to adjust with the governing conditions. The purpose of this study was to explore coping styles in type 2 diabetic patients and their potential associations with demographic factors.

Methods: In this descriptive-analytic study, 201 patients with type 2 diabetes were incorporated from the Tehran-based Dornian Care Clinic and evaluated using the Coping Inventory for Stressful Situations (CISS). Data analysis was performed using SPSS software (ver. 16) at the significance level of 0.05.

Findings: The diabetic patients in this study adopted avoidant (72.1%), emotion-oriented (17.9%), and problem-based (10%) coping strategies. While problem-oriented and emotion-oriented strategies correlated with gender, avoidant style did not. Married individuals used avoidant strategies more than singles. There was a significant relationship only between the use of problem-solving strategies and education level. Also there was a significant relationship between the complications of diabetes and adoption of problem-oriented strategies.

Conclusion: According to the results of this study, diabetic patients have hard times in the face of stresses of life events and the subsequent challenges of their disease. Counseling seems beneficial in order for effective teaching of coping strategies to diabetic patients.

Keywords: Type 2 diabetes, Coping strategies, Avoidant strategies, Emotion-oriented strategies, Problem-oriented strategies

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Introduction

Chronic diseases are among the major health issues in modern societies. Such diseases affect the daily activities of patients. Medical treatments reduce symptoms but may disrupt patterns of life [1]. Type 2 diabetes is one of the most common diseases of human societies, the prevalence of which has not diminished but rather increased despite the advancements in medical sciences [2]. The World Health Organization (WHO) has predicted that diabetes in Iran will affect about 6.8% of the population by 2025 [3]. The chronic nature of the disease and the complications resulting from it will impose heavy burdens on the economy and reduce the quality of life of both the patients and their families. The disease is known as the main cause of limb amputation, blindness, chronic renal failure, and heart disease [1].

A diabetic patient not only undergoes early or late complications of the disease but may also face the pressures from the disease control, compliance with treatment programs, complex and costly care, frequent visits to the physician, various tests, concerns about the future, the risk of infection in children, disturbances in social and family relationships, sexual dysfunctions, and work disorders, which can increase the symptoms of mood disorders such as depression, anxiety and stress [4]. As mentioned, diabetes and the patients' need to special self-care can lead to many challenges in the daily life of these patients; all these necessitate the adoption of coping strategies in order to adapt to the situation [5].

These strategies, also known as mediators between stress and illness [1], stand as one of the major components of mental health. Stress coping strategies determine how people react to the problems of life. Accordingly, Lazarus and Folkman divided coping types based on the focal point into two major categories: problem-oriented coping and emotion-oriented coping. Problem-oriented efforts involve direct activities to change the stressful situation and prevent or reduce its effects. Individuals employ problem-oriented strategies when they believe they can do something about the stressful situation in which they are involved. Emotion-oriented coping is intended to control the stressors' emotional outcomes. Similarly, emotion-oriented efforts focus on changing emotional reactions to stressors, that is, to control emotional responses and physiological arousal to reduce stress [6]. Chouhan and Shalini found in a study on a sample of Indian individuals that diabetic patients used adaptive (problem-oriented) coping strategies to a lesser extent than healthy people [7]. However, the study by Gafvels and Wandell showed that Swedish diabetic patients applied problem-oriented coping strategies more than emotion-oriented coping strategies [5]. On the other hand, Tuncay et al. observed that the patients

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adopted problem-oriented and emotional-oriented strategies in the same way [8]. To the best of our knowledge, the relationship between coping strategies and demographic factors has not been studied in diabetic patients so far. Therefore, considering the gap and the contradiction between the findings of the above-mentioned studies, the present study aimed to explore the coping styles in type 2 diabetic patients and their potential associations with demographic factors.

Methods

The population of this descriptive-analytic study comprised of all diabetic patients referring to "the Tehran-based Dornian Care Clinic. The sample size was calculated using $n = z^2 \times p\ (1 - p) / d^2$ formula, and following Taheri et al.'s study [9] (p=0.05, p=0. 85), 201 persons were recruited using convenience sampling method. The patients visiting the clinic from September 2016 to March 2017 were incorporated upon provision of informed consent. They subsequently completed the Coping Inventory for Stressful Situations via interviews conducted by a trained psychologist. Inclusion criteria were provision of informed consent and a minimum of elementary education level.

The research tool was the Coping Inventory for Stressful Situations (CISS). The inventory holds 48 items that assess the coping responses of individuals in three main domains: problem-oriented coping or active coping with the problem in order to manage and solve it; emotion-oriented coping or focus on emotional responses to the problem; and avoidant coping or escape from the problem. The items are in a five-point Likert scale from never (score 1) to always (score 5). The range of scores for the three coping behaviors varies from 16 to 80. The dominant coping style of an individual is determined according to the score s/he obtains on the test; i.e. if one obtains a higher score in a certain behavior, that behavior is considered as his/her coping style. The Cronbach's alpha coefficients for the problem-oriented, emotion-oriented and avoidant domains have been reported as 0.90, 0.85 and 0.85, respectively. The validity and reliability of this instrument were confirmed in the Iranian context in Akbarzadeh's study where the reliability of the tool was reported to be 0.75 [10].

The data were analyzed in SPSS software (ver.16) at the significance level of 0.05 using independent T-test, ANOVA, Mann-Whitney, and Kruskal-Wallis tests. The data in this paper are part of the clinical research project with the ethics code of Ir.bums.rec.1395.224.

Findings

In the current study, 25% of the participants were men and 75% were women. The mean age of the participants was 47 years, and their

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average duration of diabetes was 6 years; 46% of them had elementary or junior high school degrees, 40% had high school diplomas, and 14% had tertiary degrees.

Diabetic patients in this study employed predominantly the avoidant strategies followed by the emotion-oriented and problem-oriented strategies (Table 1).

Table 1: Mean, standard deviation, number of persons, and percentage of coping strategies used by diabetic patients

Coping styles	No. of users	Percentage of users	Mean	Standard deviation
Avoidant	145	72.1%	52.39	9.64
Problem-oriented	20	10%	43.93	7.56
Emotion-oriented	36	17.9%	43.72	9.09

The frequency distribution of stress, depression, and anxiety in the diabetic patients in terms of individualistic variables are given in Table 2.

Table 2: Distribution of coping strategies in diabetic patients in terms of demographic factors

Demographic factors		Coping styles	Number of users	Percentage of users	Mean score	Standard deviation
Gender	Male	Emotion-oriented	10	20%	47.7	8.5
		Problem-oriented	6	12%	46.34	7.2
		Avoidant	34	68%	53.48	8.8
	Female	Emotion-oriented	26	17.2	42.40	8.9
		Problem-oriented	14	9.3	43.13	7.5
		Avoidant	111	73.5	52.03	9.8
Age (years)	39-43	Emotion-oriented	29	18.2	44.04	9
		Problem-oriented	17	10.7	43.91	7.3
		Avoidant	113	69.1	51.94	8.9
	49-59	Emotion-oriented	7	16.7	42.50	9.2
		Problem-oriented	3	7.1	43.98	8.5
		Avoidant	32	76.2	54.07	11.8
Education	Elementary/Junior high school	Emotion-oriented	13	14	42.56	9.3
		Problem-oriented	15	16.1	45.51	6.8
		Avoidant	86	69.9	53.23	9
	High school diploma	Emotion-oriented	17	21.2	45.14	7.8
		Problem-oriented	2	2.5	41.88	6.3
		Avoidant	61	76.2	51.39	8.6
	Tertiary	Emotion-oriented	6	21.4	43.57	11.1
		Problem-oriented	3	10.7	44.54	11.2
		Avoidant	19	67.8	52.46	13.6
Number of children	0-4	Emotion-oriented	24	18.8	43.42	9.1
		Problem-oriented	12	9.4	43.64	7.8
		Avoidant	92	79.1	51.45	9.3
	4-8	Emotion-oriented	12	16.4	44.23	9.1
		Problem-oriented	8	11	44.23	9.1
		Avoidant	53	72.7	54.04	9.9
Duration of diabetes (years)	1-6	Emotion-oriented	22	18.6	42.77	9.22
		Problem-oriented	8	6.8	43.24	7.60
		Avoidant	88	81.7	52.79	10.58
	6-11	Emotion-oriented	14	16.9	45.06	7.78
		Problem-oriented	12	14.5	44.90	7.49
		Avoidant	57	68.7	51.82	8.15

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Given the normal distribution of the data in the emotion-oriented and problem-oriented strategies according to Kolmogorov-Smirnov's test, T-test, ANOVA, and Pearson's correlation coefficient were used. Moreover, as the data of the avoidant strategies were not normally distributed, Mann-Whitney's test, Kruskal-Wallis test, and Spearman's correlation coefficient were applied.

The results of this study showed that adoption of problem-oriented (P<0.001) and emotion-oriented (P= 0.009) strategies correlated significantly with gender, but there was no significant relationship between avoidant strategies and gender (P>0.05). There was a significant relationship between marital status and avoidant strategies (P=0.046) where married people used these strategies more than single ones. However, no significant associations were found between problem- and emotion-oriented strategies and marital status (P>0.05). There was a significant relationship between using problem-oriented strategies and education level (p=0.006). Nevertheless, emotion-oriented and avoidant strategies did not correlate with education level (P>0.05). Also there was a significant association between the complications of diabetes and problem-oriented strategies (p=0.023) though this relationship did not apply to the cases of emotion-oriented and avoidant strategies (P >0.05) (Table 3).

In addition, none of the coping strategies had a significant relationship with age, duration of hepatitis, and number of children (P >0.05).

Table 3: Mean scores of coping strategies based on demographic factors

		Problem-oriented strategies	Emotion-oriented strategies	Avoidant strategies
Gender	Female (n=151)	43.13 ± 0.61	42.40 ± 0.72	52.3 ± 0.8
	Male (n=50)	46.34 ± 1.02	47.70 ± 1.2	53.48 ± 1.25
	Statistical test result	T-test P <0.001	T-test P = 0.009	Mann-Whitney P = 0.755
Education	Elementary/Junior high school (n=93)	45.51 ± 0.7	42.5 ± 0.9	53.2 ± 0.93
	High school diploma (n=80)	41.88 ± 0.7	45.1 ± 0.8	51.3 ± 0.96
	Tertiary (n=28)	44.54 ± 2.1	43.5 ± 2.1	52.4 ± 2.5
	Statistical test result	ANOVA P = 0.006	ANOVA P = 0.172	Kruskal-Wallis P = 0.332
Complications	No complication (n=148)	44.71 ± 7.50	43.85 ± 9.14	53.65 ± 9.4
	Eye (n=25)	43.76 ± 7.6	42.76 ± 7.69	47.88 ± 7.29
	Kidney (n=8)	39.25 ± 4.16	48.75 ± 12.75	51.25 ± 12.68
	Physical weakness (n=16)	41.31 ± 8.27	41.64 ± 9.05	47.94 ± 11.75
	Statistical test result	ANOVA P = 0.023	ANOVA P = 0.378	Kruskal-Wallis P = 0.617
Marital status	Married (n=160)	43.47 ± 9.09	43.89 ± 7.58	51.68 ± 10.07
	Single (n=41)	44.68 ± 9.17	44.05 ± 7.68	55.17 ± 7.18
	Statistical test result	T-test P = 0.907	T-test P = 0.451	Mann-Whitney P = 0.046

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Discussion

One of the important indicators of health is the way individuals cope with stressors [6]. Although a diabetic person cannot completely eliminate stress from his/her life, he/she can control the disease by employing effective coping strategies [11].

The purpose of this study was to determine the coping styles adopted by type 2 diabetic patients and their potential associations with demographic factors.

According to the findings, the predominant coping style employed by the diabetic patients in this study was avoidant followed by emotion-oriented and problem-oriented, respectively. This finding is in line with the results of Coelho et al. [12], Movahhed et al. [13], and Agha Mohammadian et al. [14]. In Coelho et al.'s study on 123 non-insulin-dependent diabetic patients, it was found that most diabetic patients use the avoidant coping style, which leads to an inappropriate quality of life. However, this finding is not consistent with the results of some other studies, including those by Khadri et al. and Soleimani et al. [15,16]. The study of Soleimani and colleagues showed that the subjects under study applied both problem- and emotion-oriented strategies more than the avoidant strategies in stressful situations [12]. Stress coping strategies may affect psychosocial states such as psychological adjustment, depression, and quality of life. The use of avoidant strategies to solving problems has negative effects such as weight loss and metabolic control [14].

On the other hand, problem-oriented coping strategies, as compared with emotion-oriented coping strategies, have been associated with more successful medical results, better self-care behaviors, metabolic control and psychological well-being in diabetic patients, leading to improved self-esteem, increased purposefulness, and enhanced patient morale, and hence, improving the quality of life [1]. In explaining the greater adherence of diabetic patients to the avoidant strategies than the other two types, it can be posited that diabetic patients have several constraints such as dietary intake, frequent infections, risk of frequent hospitalization due to complications of the disease, coercion in frequent injections on insulin, and provision of costs, as well as the limitation in bearing children, initiating family ties, and employment; therefore, they cannot employ appropriate and compatible coping strategies. It is also worth noting that the way individuals respond to stressful events depends on the level of compatibility, the availability of supportive resources, previous experiences in coping with stressful situations, and several other factors, which are not the same for different individuals, resulting in varying findings of various researches.

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As far as the literature indicated, there is no study that covers the relationship between demographic factors and coping skills in type 2 diabetic patients. Accordingly, the final section of the current discussion examines this relationship in other target groups.

Based on the findings of this study, adherence to emotion- and problem-oriented coping strategies had a significant relationship with gender such that women used these strategies more than men, which is consistent with the results of previous studies [17-19]. In some studies, however, such as that of Inanlou et al., no associations were reported between gender and coping strategies [20]. Perhaps, one reason for these differences can be found in cultural-educational factors, societal expectations, and biological structure of these two genders. The results of this research showed that problem-oriented coping strategies correlated with the level of education and diabetes complications. This finding is not consistent with the results of previous studies [17, 19, 20]. Also the findings of this research showed a significant relationship between avoidant coping strategies and marital status.

In the few studies that have covered the relationship between coping strategies and demographic factors, there is no significant correlation between coping strategies and demographic factors such as age, duration of diabetes, number of children, marital status, education, and complications of diabetes (except for gender). Similarly, the present study did not find significant associations between any of the coping styles and age, duration of diabetes, and number of children. The reason can be attributable to the fact that a person learns coping strategies from the moment of birth from the environment, particularly the behavior of the parents, where any change to the established strategies after their formation can be highly difficult due the demographic factors. Nonetheless, these behaviors may be affected considerably in case the patients have standardized training courses to change these strategies.

Conclusion

Findings of this study suggest that type 2 diabetic patients have problems dealing with life stresses and challenges posed by their disease such that they tend to avoid the problem instead of constructive confrontation with the problem. This can be due to stress, anxiety, and several problems associated with the disease, which, in turn, reduce their mental health. Therefore, counseling and educational interventions will be beneficial in improving the status of coping strategies, and, subsequently, reducing diabetes-associated complications.

Conflict of Interest:

There are no conflicts of interest to report.

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Authors' Contributions

In this article, the principal author was Mrs. Ahangari, Ms. Moasheri was Supervisor, and Dr. Norozi and Dr. Shayesteh were consultants.

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