Relationship between A Coping Style and Self-Care Activities of Patients with Type 2 Diabetes Mellitus (T2DM) at Endocrinology and Diabetes Center in Al-Basra City: a cross-sectional study

العلاقة بين أسلوب التكيف وأنشطة الرعاية الذاتية للمرضى المصابين بالسكري من النوع الثاني في مركز الغدد الصماء والسكري في مدينة البصرة: دراسة عرضية مقطعية

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الخلاصة:
خلفية البحث: الرعاية الذاتية لمرض السكري هي في المقام الأول مسؤولية المريض. ويمكن أن يشكل الالتزام بنظام الرعاية الذاتية لمرضى السكري تحدياً مع زيادة التركيز على تجنب المضاعفات. ويتعين على المريض أن يقوم بعدة تغييرات في نظامه الغذائي وأسلوب حياته عن طريق التحكم الذاتي في مرض السكري. وتسمى هذه التغييرات آليات التكيف. وتؤثر القدرة على التكيف على التحكم الغليسيمي للمريض على المدى الطويل من خلال المخاطر المحتملة، مما يؤثر على الالتزام بالإدارة الذاتية.
الأهداف: لتقييم العلاقة بين أسلوب التكيف وأنشطة الرعاية الذاتية للمرضى المصابين بالسكري من النوع الثاني في مركز الغدد الصماء والسكري في مدينة البصرة وايجاد العلاقة بينهما.
المنهجية: اجريت دراسة عرضية مقطعية وصفية خلال الفترة من 17 / تشرين الثاني / 2020 إلى 3 / نيسان / 2021، في مدينة البصرة/ العراق. وكانت الدراسة هي اختيار عينة هادفة (غير احتمالية) تكونت من (60) مريضاً.
النتائج: تظهر نتائج الدراسة أن الفئة العمرية للمشاركين على مستوى (46-65 عاماً) كانت من فئة الدراسة (62%). وتظهر الدراسة وجود ارتباط إحصائي كبير بين اسلوب التكيف والتمارين الرياضية من ناحية واختبارات سكر الدم والأدوية من ناحية أخرى (p 0.05)، فإن معامل الارتباط لم يكن كبيراً بما يكفي للنظر في الارتباط القوي، جميع البارامترات الأخرى لم تكن مرتبطة.
الاستنتاج: تبين الدراسة الارتباط بين أنشطة الرعاية الذاتية لمرضى السكري والخصائص الاجتماعية والديموغرافية للمشاركين في الدراسة. وهناك ارتباط كبير بين أنشطة الرعاية الذاتية وأسلوب التكيف.
التوصيات: تثقيف المرضى المصابين بمرض السكري من النوع الثاني للحفاظ على أنشطة الرعاية الذاتية للسيطرة على مرض السكري ومنع مضاعفاته.
الكلمات المفتاحية: أسلوب التكيف، أنشطة الرعاية الذاتية، مرض السكري من النوع الثاني.

ABSTRACT:
Background: Diabetes self-care is primarily the patient's responsibility. Adherence to diabetes self-care regimens can be challenging with a greater focus on complication avoidance. The patient has to make several changes in his diet and lifestyle by taking diabetes self-control. These improvements are called coping mechanisms. The coping ability affects glycemic control of the patient for the long term through possible risks, this affects self-management adherence.
Aims of the study: To assess a coping style and self-care activities of patients with Type 2 Diabetes Mellitus at endocrinology and diabetes center in Al-Basra city and found relationship between them.
Methodology: A cross-sectional descriptive purposive study is conducted through the period of 17th November, 2020 to 3rd April, 2021 in Al-Basra city/ Iraq. The study was purposive (non-probability) composed of (60) patients.
Results: The study findings Shows that participant's age group at a level (46-65 years) were (62%). (51.7%) were males. The study shows a significant statistical correlation between coping and exercise on one hand and blood tests and medications on the other hand (p values <0.05), the correlation coefficient was not large enough to consider strong correlations. All other parameters were not correlated.
Conclusion: Findings of the study shows the association of diabetes self-care activities and socio-demographic characteristics of study participants. There is a significant correlation between self-care activities and coping style.
Recommendations: Educating patients with Diabetes Mellitus Type 2 to maintain self-care activities to control, and prevent complications of diabetes.
Keywords: Coping Style, Self-Care Activities, Diabetes Mellitus Type II.

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INTRODUCTION

Diabetes mellitus (DM) is a most common chronic metabolic disease. Result in impairment of carbohydrate, fat, and protein metabolism. Caused by the absence or deficiency

of active insulin or insulin resistance is produced from beta cells of islets Langerhans, that's lead to raise blood glucose for a prolonged period [(1)].

Type 2 diabetes mellitus (T2DM), also known as (Non-Insulin Dependent Diabetes Mellitus NIDDM) is considered a major type of diabetes around the world. In which ineffective use of insulin, also can occur due to slow progressive loss of pancreatic beta cells (β-cells). Over the past two decades, T2DM is highly diagnosed in adults [(2)].

Good coping has been described by the American Association of Diabetes Educators (AADE) as an important AADE7 self-care behavior, for the successful self-management of diabetes. Many psychosocial causes have been shown to decrease an individual's ability to retain metabolic function, most likely because of diminished medication adherence. These are inadequate coping, pressure of family, stress and anxiety effects, improper or low social support, and low family income [(3)].

The coping ability affects glycemic control of the patient for the long term through possible risks, this affects self-management adherence. The psychosocial improvement achieved through coping strategies leads to increased quality of life and adherence in diabetic patients, while decreased coping ability leads to greater denial, noncompliance with medications, depression, and psychological distress [(4)].

Self-care refers to the practices of people involved to ensure stable functioning, ongoing personal growth, and well-being. Self-care is further characterized to include regular evaluation of symptoms and commitment to medication. That promotes the use of self-care and treatment assessment. The theory of self-care is the basis for three other hypotheses, including self-care theory, self-care deficit theory, and nursing systems theory [(5)].

Diabetes self-care control is primarily the patient's responsibility. Adherence to diabetes self-care regimens can be challenging with a greater focus on complication avoidance. The patient has to make several changes in his diet and lifestyle by taking diabetes self-control. These improvements are called coping mechanisms. Coping is a response that decreases the physical, emotional, and psychological pressure related to a difficult life and everyday issues [(6)].

Self-care is characterized as behavior taken within the community by individuals to take proper care of them. Many complications and unchecked T2DM death also impose a substantial burden on individuals, families, and the community T2DM people need lifetime self-care to prevent or delay short- and long-term complications in their lives and improve quality of life [(7)]. American Association of Diabetes Educators in patients with diabetes, guidance seven main self-care activity habits and practices strengthen glycemic regulation, reduce the risks associated with diabetes and help improve the overall quality of living, including a healthy diet, physical exercise, daily blood sugar testing, medication adherence, successful approach to problem-solving, good coping ability and reducing risk [(8)].

AIMS OF THE STUDY

To assess a coping style and self-care activities of patients with Type 2 Diabetes Mellitus at endocrinology and diabetes center in Al-Basra city and found relationship between them.

METHODOLOGY

- **Study Design:** A cross-sectional descriptive purposive study is conducted through the period of 17th November, 2020 to 3rd April, 2021 in Al-Basra city/ Iraq. To determine (Relationship between A Coping Style and Self-Care activities of Patients with Diabetes Mellitus Type II at Endocrinology and Diabetes Center in Al-Basra City). To achieve the study goals. The study instrument consists of two parts, including the following: **Part I:** Patients Socio-Demographic Characteristics. This part is concerned with the collection of demographic data obtained from

the patients by interview questionnaire sheet and consists of (7) items including (age, gender, level of education, marital status, occupation, monthly income of the family). **Part II:** This part is composed of two tools that were used in the study, after getting the approval of the authors who had conducted it.

- **Study Setting:** The study was done in the Specialized Endocrine and Diabetes Center in Basra, southern Iraq.

RESULTS:

Table (1): Participants Socio-Demographic Characteristics

Variables	Rating And Intervals	F.	%
Age	25-45 years	23	38.0
	46-65 years	37	62.0
Gender	Male	31	51.7
	Female	29	48.3
Level of education	Illiterate	11	18.3
	Elementary	14	23.4
	Intermediate	12	20.0
	Preparatory	15	25.0
	Institute	8	13.3
Marital status	Single	8	13.3
	Married	46	76.6
	Separated	5	8.3
	Widowed	7	11.6
Monthly Income of the Family (in Iraqi Dinar)	150000-300000	35	58.4
	300000-600000	20	33.3
	600000-900000	3	5.0
	More than 900000	2	3.3
Profession	Employee	5	8.3
	Freelancer	22	36.6
	Housewife	20	33.3
	Retired	3	5.0
Residence	Urban	50	83.4
	Rural	10	16.6

Table 1 show that majority of study sample (62.0%) of ages are (46-65 years), according to the gender majority of them (51.7%) are males. Higher percentage of participants (25.0) has preparatory education. Relative to marital status participants (76.6 %) were married. The monthly income is about (150,000- 300,000 IQ) for the patients in the study about (58.4%). According to the profession (36.6%) of the study were freelancers. The residence shows that the urban is the dominant residential for a study (83.4%).

Table (2): Mean of score of Diabetes Self-care activities

Self-care activities	Mean
Diet	2.7
Exercise	0.6
Blood glucose test	0.9
Foot care	2.2
Medication	5.9

Table 2 shows mean of scores of diabetes self-care activities among patients with diabetes mellitus during last seven days, diet (2.7), Exercise (0.6), Blood glucose test (0.9), Foot care (2.2), Medication (5.9). Majority of study sample have higher mean scores (5.9) for medications intake, but lower mean scores (0.6) for Exercise.

Table (3): Diabetes Coping Measure of study participants

Diabetes coping measure	p-value*
2.3	**0.0001**

*T-test

Table 3 shows that coping measure were (2.3) (P-value < 0.05).

Table (4): Association of Socio-Demographic Characteristics and Self-care Activities among Patients with Type 2 Diabetes Mellitus.

Variables		Mean and Stander Deviation	P value*
Age	25-45 years	2.4 ± 0.3	0.117
	46-65 years	2.6 ± 0.3	
Gender	Male	2.5 ± 0.3	0.157
	Female	2.7 ± 0.3	
Level of education	Illiterate	2.6 ± 0.4	0.903
	Elementary	2.5 ± 0.3	
	Intermediate	2.6 ± 0.2	
	Preparatory	2.6 ± 0.2	
	Institute	2.5 ± 0.3	
Marital status	Single	2.7 ± 0.2	0.240
	Married	2.6 ± 0.2	
	Separated	2.3 ± 0.2	
	Widowed	2.4 ± 0.3	
Income	150-300 KID	2.6 ± 0.2	0.079
	300-600 KID	2.5 ± 0.3	
	600-900 KID	2.6 ± 0.3	
	More than 900 KID	2.1 ± 0.3	
Profession	employee	2.5 ± 0.4	0.893
	Freelancer	2.5 ± 0.2	
	Housewife	2.6 ± 0.2	
	Retired	2.5 ± 0.3	
Residence	Urban	2.6 ± 0.3	0.363
	Rural	2.4 ± 0.3	

*ANOVA

Table 4 shows the non-statistically significant between diabetes self-care activities and socio-demographic characteristics of study participants and not seem to influence self-care activities (P values > 0.05).

Table (5): Correlation of Coping to Self-Care Activities among study participants

Subdomain	Statistic test	diet	Exercise	Blood glucose test	Foot care	Medication
Coping	Correlation Coefficient*	0.2	-0.3	0.2	0.271	0.213

	P value	0.07	0.01	0.4	0.148	0.258
Diet	Correlation Coefficient*		-0.25	0.3	0.07	-0.217
	P-value		0.2	0.03	0.6	0.249
Exercise	Correlation Coefficient*			0.5	-0.229	-0.140
	P-value			0.02	0.3	0.5
Blood glucose test	Correlation Coefficient*				0.019	-0.365
	P-value				0.920	0.04
Foot care	Correlation Coefficient*					0.179
	P-value					0.4

*Spearman correlation

Table 5 Shows despite a significant statistical correlation between coping and (exercise, diet, blood glucose test). The correlation coefficient was not large enough to consider strong correlations (R < 0.5). All other parameters were not correlated.

DISCUSSION

Table (1) regarding the patients' Socio-demographic characteristics, the majority (62.7%) of study sample at an old age ranging between (46-65 years), These findings agree with results obtained from Salahen et al., (2020), found that the majority of the participants were between the ages of (40-50 years) at a percentage (53.19%). The researcher explains that the reason behind this finding was due to the study target sample were individuals with T2DM, which commonly occurs at an old age rather than a young age group [(9)]. Regarding participant's gender, the majority (51.7%) of the sample were males, while majority of the study (25.0%) of the study have preparatory education. Gabish and Mohammed, (2018) study about "Effectiveness of Health Education Program for Type 2 Diabetes Mellitus Patient's Self-efficacy toward Managing Feet at Endocrinology and Diabetes Center in Al-Rusafa Sector". Supports our finding in which the majority of the study were male (60%), but the majority of study (25.0%) had high school education and elementary school graduates [(10)]. According to the researcher's opinion, this outcome may be due to the method of random sampling leading to this result occurring by chance.

Regarding to marital status of study participants, majority (76.6%) were married. Study supports this study finding conducted by Al Mansour, (2020) about "The Prevalence and Risk Factors of Type 2 Diabetes Mellitus (DMT2) in a Semi-Urban Saudi Population". The majority of the sample was married (76.6%). Marriage affects the way of life; couples must increase their food intake and become less active after marriage, which increases their body's weight and risk of getting the disease [(11)].

The researcher believes that this outcome is consistent with the traditional ideals of the Iraqi culture, which promotes young people to marry and to form a family.

According to occupation and monthly income, the higher percentage (58.4%), had low income (150,000-300,000 IQ), while most study (36.6%) were freelancers. Also, Al Mansour, (2020) in which the majority of respondents (42.2%) had a low income. While regarding participant's occupation, this study stands out that the majority of them are businesses or private people (38.5%). fewer housewives (10.3%). Good income may play a significant role in improving self-care ability [(11)].

According to the residence of the study, our study results reveal that the majority of them were from urban areas (83.4%). Also Study conducted by Asa`ad et al., (2019) Attempt to "assess the quality of life of patients with type 2 diabetes in the city of Erbil". It shows that the majority of patients were from urban areas (81.9%) [(12)].

This may indicate that diabetes nearly occurs among those living in urban areas and not among those living in rural areas due to the nature of the lifestyle and other risk factors. Apart from residence and income, there was no significant statistical difference in other variables between the study and control group (P values > 0.05).

Table (2) shows mean of scores of diabetes self-care activities among patients with diabetes mellitus during last seven days, diet (2.7), Exercise (0.6), Blood glucose test (0.9), Foot care (2.2), Medication (5.9). Majority of study sample have higher mean scores (5.9) for medications intake, but lower mean scores (0.6) for Exercise. While the study by Abu-Bakr et al., (2020) supported our study there were inadequate self-care activities performed by the patients before the awareness but improved after that. The researchers thought that this awareness was working as a red alarm for those patients. Data from this study reinforce the continuing need for more diabetic-related education that is intended to improve self-care activities among diabetics [(13)].

Table (3) Shows that coping measure were (2.3) (P-value < 0.05). A study by Loft, (2015) does not agree with our study findings. Attempt to identify "Stress and Coping in Adults with Type 2 Diabetes Who Initiate Insulin Therapy". The study result shows that scorings that fewer coping processes [(14)].

Table (4) concerning the association of diabetes self-care activities and socio-demographic characteristics of study participants, it did not seem to influence self-care activities (P values > 0.05). The researcher point of view, there are many factors that may affect the level of self-care and conditioning. It is possible that this did not happen with the sample of this research, but this view cannot be generalized. This result not similar to a study conducted by Bhatti et al., (2018) about "Impact of Socio-demographic Factors on Self-care Practices among Patients with Type 2 Diabetes in Lahore, Pakistan", Reveals that socio-demographic characteristics of sex, age, educational level, marital status, and monthly household income were associated with the performance of recommended self-care, Sex was the most important socio-demographic indicator of self-care among patients with diabetes [(15)]. While there is a study nearly similar to our finding applied by Mohammed and Hamza, (2016) was discovered a highly significant relationship between patients' self-care activities education level of patients, while there is a non-significant relationship with other demographic and clinical data [(16)].

Table (5) reveals that significant statistical correlation between coping and exercise on one hand and blood tests and medications on the other hand (p values < 0.05), the correlation coefficient was not large enough to consider strong correlations (R < 0.5). All other parameters were not correlated. This outcome agrees with the study performed by Collins et al., (2009) showed that patient's perceptions of their self-care varied on a spectrum, displaying differences in self-care responsibilities such as competence with dietary planning, testing blood sugar, and regular exercise. Also found that coping style affected by different self-care activities [(7)].

CONCLUSION

Findings of the study shows there is a significant correlation between self-care activities and coping style, and the association of diabetes self-care activities and socio-demographic characteristics of study participants.

RECOMMENDATIONS:

1. The ministry of health would get consideration the availability of active sessions to educate diabetes patients on how to cope with their disease and enhance patients' understanding of healthy coping with T2DM .
2. Educating patients with T2DM to maintain self-care activities to control and adaptation T2DM and complication of diseases .
3. A larger sample is needed in future research will enhance the generalizability of the findings of future studies.

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