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ORIGINAL ARTICLE

Self-Efficacy among Type 2 Diabetic Patients

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ABSTRACT

Background: High level of self-efficacy and adherence to self-care activities have a positive impact on the achievement of glycemic goal among diabetic patients. In Iraq, there is a gap in knowledge related to self-efficacy management and its influence on adherence to self-care activities and overall disease control. Therefore, the study aimed to assess self-efficacy among type II diabetes mellitus and its associated socio-demographic variables.

Methods: A cross-sectional study was conducted on a sample of 400 patients is selected purposively who are diagnosed with type II DM who attended AL-Zahraa Teaching Hospital in Wasit Province/ Iraq. The reliability of the questionnaire was achieved through a pilot study and then presented to experts to prove its validity. The total number of items included in the questionnaire was 34-items. The data was collected by using the semi-structured interview and analyzed by the application of descriptive and inferential statistical data analysis approach.

Results: The results of the study indicated that (72.5%) of the patents exhibit a moderate self-efficacy. The analysis of variance confirmed that there were differences in self-efficacy with regards patients age (p=0.000) and duration of DM (p=0.001).

Conclusions: Patients age increased age (≥70 years) and diagnosed for 5 years ago or more significantly associated with low level of self-efficacy. Self-efficacy is considered as a predisposing factor that can be deteriorated in chronic diseases like Diabetes. Increasing in self-confidence levels of diabetic patients can set the stage for glycemic control. Interventions are recommended for glycemic control of patients with longer duration of disease.

Keywords: Self Efficacy, Patients, Type II DM.

INTRODUCTION

Diabetes mellitus type 2 is a chronic condition with a rising global prevalence that has a significant impact on patients' quality of life[1] .According to the International Diabetes Federation (IDF), there were 463 million adults living with diabetes in 2019. By 2045, this number is expected to rise to 700 million people, with type 2 diabetes mellitus accounting for 90% of cases[2] .And low- and middle-income countries being the most affected[3]. Around 1.4 million of Iraqis have diabetes. Reported T2DM prevalence in Iraq ranges from 8.5% (IDF—age-adjusted) to 13.9%. A local study including more than 5400 people, Southern Iraq, reported a 19.7% age-adjusted prevalence of diabetes in subjects aged 19 to 94 years[4]. which indicates the number of people who are at risk of type 2 diabetes-related problems, disabilities, and psychological impairments, all of which would reduce their quality of life [1,2,5]

If DM is not adequately controlled in adults, they are more likely to develop cardiovascular and other secondary problems[6]. Poor adherence has a negative impact on self-efficacy, resulting in a worse quality of life and a considerable cost burden on healthcare[7]. Poor adherence and a lack of awareness are two major concerns in the development of complications and the management of diabetes[8]. Self-efficacy and self-care behaviors are critical for persons with diabetes who need to improve their behavior[9]. Poor treatment adherence among adults is thought to be caused by non-adherence to prescribed drugs and a lack of awareness. Therefore, thus study aimed at assess self-efficacy among type II diabetes mellitus and its associated socio-demographic variables in Wasit Province/ Iraq.

METHODOLOGY

A cross-sectional study was conducted on a sample of 400 patients is selected purposively who are diagnosed with type II DM.

Study instrument: The questionnaire is one of the means to help collect data that contribute to achieving the results expected by the study, so the researcher designed this questionnaire, which aims to clarify the study objectives and significance by obtaining answers to the study's questions.

This questionnaire consists of two for parts which includes the following:

Part I: This section composed of socio-demographic information which include age, gender, economic, marital status, education level, residents, duration of DM and family history.

Part II: This section deals with self-efficacy adopted and consist of (34-items) measured the self-handiness and efficacy of diabetic patients[10].

Validity was given to an arbitrators were asked to offer their opinions and suggestions on each of the study questionnaire's components in terms of language appropriateness, association with the dimension of study variables to which it was assigned, and suitability for the study population. To assess the questionnaire's reliability, data were collected from nurses, and the test was administered to 40 subjects from the study population who were not part of the original sample. Cronbach's alpha was discovered to be 0.87.

The SPSS-20.0 software application was used. The information was evenly distributed. One-way analysis of variance and independent sample t test were used to examine variations in variables based on socio-demographic characteristics. For continuous variables, descriptive data is reported as mean standard deviation, and for categorical variables, it is shown as number (percent).

Ethical Clearance: All experimental protocols were approved by the Wasit Health Directorate in Iraq, and all experiments followed the permitted procedures

RESULTS

Finding show participants age, the mean age is 51, the age 50-59 years old were recorded the highest percentage (n=148; 37%), followed by those who are aged 40-49 years old (n=87; 21.8%), followed by those who are aged 60-69 years old (n=84; 21%), followed by those who are aged ≥70 years (n=32; 8%), and those who are aged 30-39 years old and <30 years (n=27; 6.8%) and (n=22; 5.5%) respectively. In regards with gender, the male patients were predominated (n=293; 73.3%), as compared with those who are female (n=107; 26.8%). In terms of economic, diabetic patients exhibit a sufficient economic (n=235; 58.8%), followed by those who are a certain limit enough (n=125; 31.3%) and those who are insufficient (n=40; 10%). Marital status related findings, the married patients were records the highest percentages (n=311; 77.8%), followed by those who are single (n=48; 12%) and those who are widower and divorced (n=25; 6.3%) and (n=16; 4%). Respected to the education level, the read and write were constituted the highest (n=107; 26%), followed by those who are college and above graduated (n=88; 22%), followed by those who are secondary school graduated (n=73; 18.3%), followed by those who are illiterate (n=68; 17%) and those who are

elementary and intermediate school (n=46; 11.5%) and (n=18; 4.5%). Occupation related findings, the self-work patients composed the highest (n=196; 49%), followed by those who are employment (n=130; 32.5%) and those who are unemployment and retired (n=55; 13.8%) and (n=19; 4.8%) respectively. In regards with residents, more than half of participants were rural residents (n=223; 56%) compared with those who are urban (n=176; 44%). The duration of disease related T2DM, most of patients exhibit 1-5 years (n=245; 61.3%), followed by those who are >5 years (n=136; 34%) and those who are <1 year (n=19; 4.8%). In regards with family history of DM, more than half of participants expressed no family history (n=260; 65%) compared with those who are family history associated DM (n=140; 35%).

Table 1: Sample Characteristics

Demographic Variables	Class	n=400	%
Age/years (M± SD= 51.76±10.707)	<30 years old	22	5.5
	30-39 years old	27	6.8
	40-49 years old	87	21.8
	50-59 years old	148	37.0
	60-69 years old	84	21.0
	≥70 years old	32	8.0
Gender	Male	293	73.3
	Female	107	26.8
Economic	Sufficient	235	58.8
	Certain limit	125	31.3
	Insufficient	40	10.0
Marital status	Single	48	12.0
	Married	311	77.8
	Divorced	16	4.0
	Widower	25	6.3
Education level	Illiterate	68	17.0
	Read and write	107	26.8
	Elementary school	46	11.5
	Intermediate school	18	4.5
	Secondary school	73	18.3
	College and above	88	22.0
Occupation	Employment	130	32.5
	Self-work	196	49.0
	Unemployment	55	13.8
	Retired	19	4.8
Residents	Rural	224	56.0
	Urban	176	44.0
Duration of DM	< 1 years	19	4.8
	1-5 years	245	61.3
	>5 years	136	34.0
Family history	Yes	140	35.0
	No	260	65.0

Findings demonstrated that the (72.5 %) of type II diabetic patients expressed a moderate level of self-efficacy (M ± SD= 61.35±13.233).

Table 2: Self Efficacy

Self-Efficacy	Freq.	%	M ± SD
Poor (M=34-56)	96	24.0	61.35±13.233
Moderate (M=57-79)	290	72.5	
Good (M=80-102)	14	3.5	
Total	400	100.0	

M: Mean for total score, SD=Standard Deviation for total score

Table 3: Significant Differences in Self-efficacy with regard Socio-demographic Variables

Self-efficacy	Source of variance	Sum of Squares	d.f	Mean Square	F	p≤ 0.05
Age	Between Groups	10.261	5	2.052	16.112	.000
	Within Groups	50.182	394	.127		
	Total	60.443	399			
Economic	Between Groups	.235	2	.117	.774	.462
	Within Groups	60.208	397	.152		
	Total	60.443	399			
Marital status	Between Groups	.974	3	.325	2.162	.092
	Within Groups	59.469	396	.150		
	Total	60.443	399			
Education level	Between Groups	.707	5	.141	.933	.460
	Within Groups	59.736	394	.152		
	Total	60.443	399			
Occupation	Between Groups	.075	3	.025	.164	.921
	Within Groups	60.368	396	.152		
	Total	60.443	399			
Duration of DM	Between Groups	2.057	2	1.029	6.995	.001
	Within Groups	58.385	397	.147		
	Total	60.443	399			

With regards two class variables

Self-efficacy	Class	Mean	SD	t-value	d.f	p≤ 0.05
Gender	Male	1.8171	.38950	1.061	398	.289
	Female	1.7705	.38819			
Residents	Rural	1.8329	.36873	1.639	398	.102
	Urban	1.7687	.41209			
Family history	Yes	1.7426	.42050	2.350	398	.019
	No	1.8380	.36780			

Findings demonstrated there were significant differences in self efficacy with regards patients age (p=0.000) and duration of DM (p=0.001).

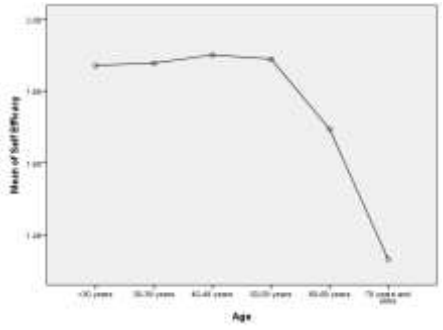

Figure 1: Distribution of Self Efficacy according to Age Group

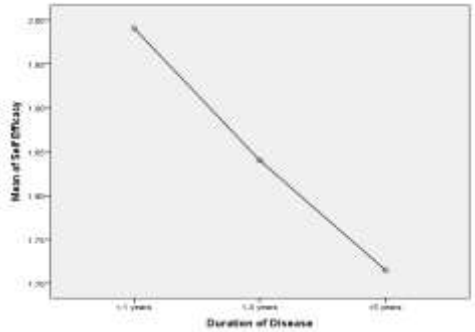

Figure 2: Distribution of Self Efficacy according to Duration of Disease

DISCUSSION

Diabetes self-efficacy (DSE) which developed to measures the diabetic patient's confidence regarding to diet, exercise and medical treatment. In general, the current study findings found the M ± SD= 61.35±13.23 and according to the study criteria, the type II diabetic patients expressed a moderate level of self-efficacy (table 2). In regards with chronic disease like diabetes mellitus, the unsatisfactory self-efficacy may due to a patients faced a barriers to diabetes self-management identified by patients with diabetes were categorized into five major themes: inadequate knowledge and behavioral beliefs, shortage of resources, suffering from health problems, negative emotions, and lack of support[11].

Study showed that self-efficacy levels of the patients were found to be at a moderate level[12]. Another study showed that was performed regarding the effect of diabetes training on the management of diabetes, self-efficacy levels of study group (67.98 ± 12.74) as well as control group (69.37 ± 9.64) were found to be at a moderate level before the training[13]. Self-efficacy levels of the patients for diabetes management were at a low level before the intervention[14]. Another study has found that Korean patients who received specialist care reported higher self-efficacy than those who received generalist care[15].Despite the differences in sampling, the similarities in these scores are striking.

Moreover, our result showed that self-efficacy for diabetes management was at a moderate level and should be improved. In fact, it is important that patients should have high self-efficacy levels in order to undertake and control behaviors that are recommended for the treatment of diabetes. Patients who have a low self-efficacy are less prone to new health behaviors or to changing usual behaviors[16]. In the study by Morrison and Weston on diabetic patients, it was reported that patients who had a high self-efficacy level had a more positive blood glycemic level, overall health, and psychological health; and patients who had a low self-efficacy experienced a high level of stress[17]. Thus, the participation of self-efficacy levels for diabetes management should be maintained above a moderate level.

In current study findings, only the age and duration of disease (T2DM) had been influenced factors of self-efficacy among type II diabetes mellitus.

Type II diabetic patients exhibited that there were highly significant differences in self-efficacy with regards patients age (p=0.000). This finding means that the age of patients considered a factor influenced their efficiency. The differences were in favor of the 40-59 age groups, as they had better self-efficacy than others, while all the older ones (70 years and more) had weaker self-efficacy than others. Which means that the increased age groups among type II diabetic patients significantly associated with poor efficacy. Also, in a Peruvian public hospital the poor self-efficacy was associated with advanced age[18]. There was a negative correlation between age and general self-efficacy and diabetes self-efficacy[19].

Findings demonstrated there were highly significant differences in self-efficacy with regards duration of disease (p=0.001). Through the results as the patients with increased duration of diabetes more than 5 years were records the lower mean of self-efficacy in contrast to the patient whose duration of DM was less than a year. This means that people with a long history of diabetes had lower diabetes self-efficacy. This could be due to the fact that as time passes, patients become more exhausted about their disease, therefore their self-efficacy will also decrease. The duration of disease is an only factor significantly affect the self-efficacy among Iranian type II diabetic patients[20]. According to Bandura, the failure experience is one of the self-efficacy theory constructs, thus its decrease results in lower possibility of increasing the self-efficacy[21]. Study showed there was a negative correlation between diabetes perceived self-control scale and duration of diabetes mellitus[22]. Moreover, the results of. study done in United States showed that poor glycemic control is accompanied with long duration of diabetes. They believed that failure of patients in achieving the optimum level of glycosylated hemoglobin over time, leads to frustration, disappointment and thus may reduce their self-efficacy[23].

CONCLUSION

Patients age (increased age (≥70 years) significantly associated with low level of self-efficacy).

Duration of disease (diabetes that was diagnosed for 5 years ago or more were significantly associated with low level of self-efficacy).

Self-efficacy is considered as a predisposing factor that can be deteriorated in chronic diseases like Diabetes. Increasing in self-confidence levels of diabetic patients can set the stage for glycemic control. Interventions are recommended for glycemic control of patients with longer duration of disease.

Recommendation

Findings of this study highlight the importance to measure self-efficacy in order to develop individual self-management intervention programmers for patients with T2DM in primary care, with the aim of improving glycemic control and reducing major complications.

Encourage mass media to discuss topics related to management of diabetes mellitus and work in programs to strengthen the self-efficacy of these patients.

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