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Self-Esteem Assessment In Patients With Type II Diabetes

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ABSTRACT

WHO estimates that the number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014. Self-esteem is becoming a crucial topic for physicians, given the assumption that high self-esteem positively correlates with patients' adherence to management plan. We conducted this study to assess the self-esteem in T2DM patients and its relation to glycemic control, life-style habits and DM complication. This is a cross-sectional interview-based study that was conducted between September 2015 and July 2016 in Prince Mansour Hospital, Taif, Saudi Arabia. We included adult patients with T2D patients and excluded those with T1D, gestational diabetes and psychiatric illness. Self-esteem assessment was done using Rosenberg Self-Esteem Scale. A total of 101 patients with a mean age of 56.0 years, majority were females with long standing T2D, mean HbA1c was 8.6 %. Most of patients recorded a high score in Rosenberg self-esteem score with a mean score of 21.0. Only 4 out of the total 101 T2D patients have low self-esteem. Compared to those who are considered to have low self-esteem, those with normal self-esteem were younger ($p = 0.043$), and were more likely to be female ($p = 0.244$), have shorter T2D duration ($p = 0.423$), obese ($p = 0.267$), lower SBP ($p = 0.112$), higher HbA1c ($p = 0.347$), be physically active ($p = 0.892$), and less likely to have microvascular complications ($p > 0.05$) and to report hypoglycemia ($p = 0.633$). 96% of the screened T2D patients have normal self-esteem and were significantly more likely to be younger. Those with normal self-esteem were non-significantly more likely to be female, shorter T2D duration, have higher BMI and HbA1c, and have lower hypoglycemic episodes and microvascular complications.

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INTRODUCTION

Type 2 Diabetes (T2D) is a chronic disease that became a major health problem worldwide. In 2015, Approximately 35.4 million (9.1%) of adults were living with diabetes in the Middle East and North Africa Region. Over 40.6% of T2D patients are undiagnosed in Saudi Arabia according to the Saudi Health Information Survey Handbook 2013¹. The total of Saudi men with diabetes is 1.1 million of whom 546,000 are on diabetes medication and 275,000 considered to have poor control. Recent study showed that there are 775,000 females with diabetes of whom 356,000 are on diabetes medication and 196,000 with uncontrolled diabetes².

Self-esteem is becoming a crucial topic that not only physicians are trying to look into but parents and teachers are also interested in this topic. A study conducted in 1995 by Diener for 13,000 college students in 49 different universities and countries, it showed that high self-esteem emerged as the strongest of several predictors of life satisfaction overall⁴. Also studies performed in the US have shown that low self-esteem have negative effects on self-care behaviors in younger and older adults^{5,6}.

It's important that we focus and try to improve the self-esteem in those patients and in general population on the assumption that high self-esteem will bring positive outcome and make patients life with diabetes much easier. Self-esteem has a strong relation to happiness and it thought that low self-esteem is more likely to lead to depression in some situations and depression will lead to poor compliance and finally poor outcomes as well³.

As diabetes is lifelong disease and it needs more than a pharmacological therapy to coexist with it self-esteem and emotional support in addition to pharmacological therapy will achieve more great outcomes and accomplish much better results than pharmacological therapy alone. For example, Johnston-Brooks et al. found that self-esteem was related to diet, exercise and self-care behaviors among patients with insulin-dependent diabetes⁷. In addition, Knecht et al. found that high levels of self-esteem were associated with exercise adherence, ability to adjust insulin dosage, and oral hygiene in adult patients with diabetes⁸.

Few data exist about the relation between T2D and self-esteem especially in Taif, Saudi Arabia. Our primary goal was to find the relation between T2D and self-esteem in Taif city. Also to assess the impact of self-esteem on measured cardiovascular markers, life style habits and outcome.

MATERIALS AND METHOD

A cross-sectional study that was conducted between September 2015 and July 2016 in the Diabetes and Endocrinology Center, Taif, Saudi Arabia. All subjects with T2D were asked to participate in the study. We excluded patients with T1D, gestational diabetes mellitus and psychiatric illness history.

Subject's data that includes personal information, current medications, duration of T2D and diabetes related complications were collected. Also the social habits and a self-esteem assessment were done. Anthropometric measures were taken for each participant at the time of the visit, including blood pressure, weight and height. Recent blood work result was obtained from the subjects' electronic medical record numbers.

We used Rosenberg Self-Esteem Scale to assess the self-esteem. The scale contains 10-items that measures global self-worth by measuring both positive and negative feelings about the self. The scale is believed to be uni-dimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. A total score of ≥ 15 are considered within normal range while participants who scored below 15 are considered to have low self-esteem.

Data were collected and analyzed using the SPSS software. The Chi squared test was used to study the relationship between variables and the T-test was used to compare between means. Two-tail partial correlation between Rosenberg Self-Esteem score and both hypoglycemia and HbA1c was done.

RESULTS AND DISCUSSION

A total of 101 patients with T2D were included in this study with a mean age of 56.0 year, majority were females, with long standing T2D with mean HbA1c of 8.6 %, with a mean BMI reflecting class I obesity. Almost all of patients were married and almost half of the patients have high school degree or less and the majority of them have low income.

Regarding the T2D related complications, retinopathy and hypoglycemia were the most common complication prevalent in our participants. Management of T2D in those patients varies, with more than half of them on oral hypoglycemic agents plus insulin and 1/3 were on oral hypoglycemic agents only.

60.4% of patients reported sedentary lifestyle as they are just doing their daily routine with no exercise or walking. Also, 8.9% were active smokers with mean duration of 21.2 years of smoking.

Most of patients recorded a high score in Rosenberg self-esteem score with a mean score of 21.0. Only 4 out of the total 101 T2D patients have low self-esteem.

Compared to those who are considered to have low self-esteem, those with normal self-esteem were younger (p 0.043), and were more likely to be female (p 0.244), have with shorter T2D duration (p 0.423), obese (p 0.267), lower SBP (p 0.112), higher HbA1c (p 0.347), be physically active (p 0.892), and less likely to have microvascular complications (p > 0.05) and to report hypoglycemia (p 0.633).

Partial correlation adjusting for age, income, gender, BMI, educational level, T2D duration, complications, smoking and exercise showed a non-significant positive correlation between Rosenberg self-esteem score and HbA1c.

Table 1: Baseline characteristics of the whole cohort.

Baseline characteristics (N= 101)	
Mean age (yrs)	56.0±11.1
Female (%)	53.5
Mean diabetes duration (years)	12.6±8.6
Mean BMI (Kg/m ²)	33.2±6.6
Mean systolic blood pressure (mmHg)	134.7±20.3
Mean diastolic blood pressure (mmHg)	76.9±9.5
Mean Rosenberg self-esteem score	21.0±3.6
Diabetes related complications	
Hypoglycemia (%)	38.6
Cardiovascular disease (%)	21.8
Retinopathy (%)	43.6
Renal disease (%)	7.9
Socioeconomic	
Married (%)	96.0
Bachelor degree or higher (%)	19.8
Low income (%)	43.6
Managements	
Diet (%)	1.0
Oral hypoglycemic agents (%)	34.7
Insulin (%)	8.9
Oral hypoglycemic agents and insulin (%)	55.4
Laboratory data	
HbA1c (%)	8.6±1.9
Total cholesterol (mmol/L)	4.4±1.0
LDL (mmol/L)	2.6±0.9
HDL (mmol/L)	1.0±0.3
Lifestyle habits	
Sedentary lifestyle (%)	60.4
Active smoking (%)	8.9
Duration of smoking for the smokers (years)	21.2±9.8

In our study we showed that majority of the participants have a normal self –esteem based on Rosenberg self-esteem score. Those with normal self-esteem were more likely to be young female with shorter diabetes duration and were also less likely to have T2D related complications except for cardiovascular complications.

Previous study in T2D patients showed that the prevalence of low self-esteem was 13% while in our study 4% have low self-esteem ¹². Both studies with a very small sample size that may not be representative to our T2D patients and so findings can't be generalized.

A study that was done in Belgium for 478 emerging adults with Type 1 diabetes (T1D) whom were selected from the Belgian Diabetes Registry and completed questionnaires on personality, self-esteem, and diabetes-related distress, The result showed that patients' personality and self-esteem might be important targets for future prevention and intervention efforts ⁹. Although our study showed that those with normal self-esteem tends to have lower SBP, but higher HbA1c with no difference in lipid panel.

Table 2: Baseline characteristics based on Rosenberg self-esteem score.

	Normal self-esteem	Low self-esteem	P value
Baseline characteristic			
Number of patients	97	4	n/a
Mean age (yrs)	55.5±10.9	67.0±12.4	0.043
Female (%)	54.6	25	0.244
Mean diabetes duration (years)	12.5±8.6	16.0±9.0	0.423
Mean BMI (Kg/m ²)	33.3±6.5	29.6±7.5	0.267
Mean systolic blood pressure (mmHg)	134.0±19.7	150.5±29.7	0.112
Mean diastolic blood pressure (mmHg)	77.0±9.5	74.8±11.4	0.653
Mean Rosenberg self-esteem score	21.3±3.4	14.3±1.0	<0.001
Diabetes related complications			
Hypoglycemia (%)	37.1	50	0.633
Cardiovascular disease (%)	22.7	0.0	0.281
Retinopathy (%)	43.3	50	0.791
Renal disease (%)	7.2	25.0	0.197
Socioeconomic			
Married (%)	95.9	100	0.918
Bachelor degree or higher (%)	20.6	0.0	0.311
Low income (%)	42.3	75.0	0.410
Managements			
Diet (%)	1.0	0.0	0.341
Oral hypoglycemic agents (%)	36.1	0.0	
Insulin (%)	9.3	0.0	
Oral hypoglycemic agents and insulin (%)	53.6	100	
Laboratory data			
HbA1c (%)	8.7±1.9	8.2±0.8	0.347
Total cholesterol (mmol/L)	4.4±1.0	4.4±1.0	0.948

LDL (mmol/L)	2.6±0.9	2.4±1.1	0.744
HDL (mmol/L)	1.0±0.3	1.0±0.3	0.474
Lifestyle habits			
Sedentary lifestyle (%)	59.8	75	0.892
Active smoking (%)	8.9	0.0	0.523
Duration of smoking for the smokers (years)	21.2±9.8	n/a	n/a

Table 3: Partial correlation done adjusting for age, income, gender, BMI, educational level, T2D duration, complications, smoking and exercise.

Rosenberg self-esteem score		
HbA1c	r	0.091
	P	0.402
Hypoglycemia	r	0.151
	P	0.159

Those with low self-esteem were more likely to report sedentary lifestyle in our study. Previous study showed that sedentary lifestyle correlated with low self-esteem and that it was likely to cause mental illness^{13,14}.

Those with normal self-esteem were significantly younger than those with low self-esteem. Previous study showed that aging correlate with lower self-esteem and that is likely due to the cognitive decline¹⁰. Also those with normal self-esteem were non-significantly more likely to be female. This finding concurs with a previous study that showed girls tends to have lower self-esteem than boys and that is likely due to the difference observed in the physical characteristics and intellectual abilities as suggested¹¹.

Our study limitations include the small sample size, single center and the small number of patients with a low self-esteem. Our strength includes limited data in T2D patients and collecting data about different variables that may impacts self-esteem.

CONCLUSION:

96% of the screened T2D patients have normal self-esteem and were significantly more likely to be younger. Those with normal self-esteem were non-significantly more likely to be female, shorter T2D duration, have higher BMI and HbA1c, and have lower hypoglycemic episodes and microvascular complications. Although no difference in lipid panel but those with normal self-esteem were more likely to have lower SBP but they were more likely to report cardiovascular disease.

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