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Research Article

Self-Esteem and Patient Assessment for Chronic Illness Care in a Group of Turkish Diabetic Patients

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Abstract

Aim: The prevalence of diabetes increased rapidly with changes in lifestyle and has become a major public health problem. The International Diabetes Federation data in 2015 estimated that the current number of diabetic patients in the world, which was 415 million people, would reach to 642 million in 2040. Turkey has unfortunately been one of the countries with the highest increase in prevalence of diabetes. The prevalence was 7.2% in 1998 and it increased to 13.7% in 12 years, beyond all estimates. Diabetes is known to affect negatively of patients physical and mental well-being, family, work and social life, their interpersonal relationships and quality of life as it requires long-term and complex treatment and follow-up protocols and can lead to life-threatening complications. The aim of this study was to find the relationship between self-esteem and patient assessment for chronic illness care in patients with type 2 diabetes mellitus.

Material and Methods: A total of 105 patients with type 2 diabetes mellitus admitting to Cukurova University Endocrinology Outpatient Clinic from 01.03.2016 to 30.04.2016 were included in our study. Inclusion criterion was to have type 2 diabetes mellitus for at least six months. Participants completed sociodemographic questionnaire, Rosenberg Self-Esteem Scale and Patient Assessment of Chronic Illness Care (PACIC) scale using face-to-face interview. Data was analyzed by SPSS 20.0 statistical software. The significance level was accepted as $p \leq 0,05$.

Results: Of patients, 40% (n=42) were male and mean age was 54.2±7.5 years, 84.8% (n=89) were married, 45.7% were unemployed. The mean duration of diabetes was 10.9±7.6 years. Of patients, 12.4% mentioned that they did not receive any patient education for diabetes. As the level of self-esteem increased, the perception of health status improved (p=0.007). There was a significant relationship between duration of diabetes and having coronary artery disease (p=0.001). Employed patients had higher levels of self-esteem and better use of medications than those of unemployed patients (p=0.035 and p=0.040, respectively). The mean total score of PACIC was 3.0±0.9. The highest subscale mean score was for decision-making and the lowest score was for follow-up/coordination. There was no significant correlation between total scores of PACIC and Rosenberg Self-Esteem Scale (p>0.05).

Conclusion: It can be concluded that this group of Turkish patients with type 2 diabetes mellitus had high levels of self-esteem however low levels of patient assessment for chronic illness care. Patients and primary care professionals should focus on these two issues, as the better management of this chronic condition is essential for better quality of life and better health outcomes. Interventions should be planned and implemented and further research is required.

Keywords: Chronic Illness Care; Family Physician; PACIC; Rosenberg Self-Esteem; Type 2 Diabetes Mellitus

Background

The Chronic Care Model (CCM) is a conceptual framework that supports the evidence-based proactive and planned care for chronic disease [1,2]. It has been confirmed that the care of patients according to the principles of CCM leads to higher quality of care and better patients-level assessment of health care [3].

The prevalence of diabetes increased rapidly with changes in lifestyle and has become a major public health problem. Approximately 5.1 million people aged between 20 and 79 years died from diabetes in 2013, accounting for 8.4% of global all-cause mortality among people in this age group. Close to half (48%) of deaths due to diabetes are in people under the age of 60. The International Diabetes Federation data in 2015 estimated that the current number of diabetic patients in the world, which was 415 million people, would reach to 642 million in 2040 [4].

Turkey has unfortunately been one of the countries with the highest increase in prevalence of diabetes. The prevalence was 7.2% in 1998 and it increased to 13.7% in 12 years, beyond all estimates [5,6]. Compared to other surveys that used WHO diagnostic criteria in the Mediterranean, Central and Eastern Europe, and Middle East regions, prevalence of diabetes in Turkey is higher than in Malta [7], Tunisia [8], and Spain [9]; lower than in Egypt [10], Oman [11], Sudan [12], and Bahrain [13]; and similar to that in the Turkic population of central Asia [14].

Diabetes imposes a large economic burden on individuals and families, national health systems, and countries. It is known that diabetic patients, which may require long-term and complicated treatment and follow-up protocols, cause threatening complications and cause significant changes in the lives of individuals, affect the physical and mental well-being, family, work and social lives, interpersonal relationships and quality of life negatively.

Evidence shows that self-esteem can be a key factor influencing health care behaviors [15]. Self-esteem is a factor influencing the likelihood of adopting healthful behaviors [16]. Higher self-esteem is associated with more healthful behaviors in patients treated for type II diabetes. Low levels of self-esteem have been associated with diabetes and diabetes management [17].

In people with diabetes, studies performed in the US have shown that low self-esteem has negative effects on self-care behaviors in younger and older adults [18,19]. Another explanation about the effects of self-esteem on self-management may be its connection to self-efficacy. While one concept is the personal assessment of one's own self-worth and value, and the other relates to individual's perception of their own ability to perform certain specific tasks of behaviors, both of these constructs may influence individuals' motivations and ability to adjust to new situations [20].

The aim of this study was to find the relationship between self-esteem and assessment of chronic illness care in patients with type 2 diabetes.

Material and Methods

Design and Setting: A cross-sectional study was performed in Cukurova University Faculty of Medicine, Balcali Hospital, Endocrinology Outpatient Clinic in Adana, the fifth biggest city of the country, located in the south.

Participants: A total of 105 patients with type 2 diabetes admitting to Cukurova University Endocrinology Outpatient Clinic from 01 March 2016 to 30 April 2016 were included in our study. Inclusion criterion was to have type 2 diabetes mellitus for at least six months.

Study Protocol: Participants completed three questionnaires (sociodemographic questionnaire developed by the authors, PACIC and Rosenberg Self-Esteem scale) in the waiting room of the outpatient clinic using face-to-face interview.

Questionnaires: Sociodemographic questionnaire: This questionnaire was prepared by the authors to elicit information on demographic and clinical variables.

PACIC

The Patient Assessment of Chronic Illness Care (PACIC) has been designed to assess the implementation of the CCM from the patient's perspective that focuses on the receipt of patient-centered care and self-management behaviors [21]. The Patient Assessment of Chronic Illness Care (PACIC) is a 20-item questionnaire for patients [22]. Higher scores mean more frequent presence of the aspect of structured chronic care. This instrument has five pre-defined domains: patient activation (three items), delivery system/ practice design (three items), goal setting/tailoring (five items), problem solving/contextual counseling (four items), follow-up and coordination (five items). Each item is scored on a five-point Likert scale that ranges from 1 ("Almost never") to 5 ("Almost always"). Higher scores indicate better patient-perceived quality of chronic illness care. It has been validated in many countries in Europe [23-31]. Recent research has investigated the validity of the PACIC in the Australian context [30], and PACIC has previously been validated in the USA [21], Germany [26] and the Netherlands [23]. The PACIC has been rated the highest on feasibility scores in a systematic review of 31 instruments developed for measuring the experience and/or satisfaction of people in integrated chronic care [32]. The Turkish validity study of PACIC has been performed in 2011 by Incirkus and Nahcivan [33].

Rosenberg's Self-Esteem Scale

This questionnaire consists of ten statements. The responder has four answer choices varying from "Totally agree" to "Totally disagree". In items 1, 3, 4, 7 and 10 the answer choice "Totally agree" refers to the highest self-esteem. In items 2, 5, 6, 8 and 9 "totally agree" refers to the lowest self-esteem. The Turkish validity study of Rosenberg Self-Esteem Scale has been performed in 1986 by Cuhadaroglu [34].

Ethics and Approvals

Written informed consent was obtained from all patients. The study was approved by the Medical Ethics Committee of Faculty of Medicine, Cukurova University. The study was financially supported by the Scientific Research Unit of Cukurova University.

Statistics

Data was analyzed by SPSS 20.0 statistical software. Chi-square, Kruskal Wallis H test and Mann-Whitney U tests were used. The significance level was accepted as $p \leq 0,05$.

Results

The mean age was 54,2±7,5 years (56,4±6,2 years in men and 52,7±8,0 years in women). Of 105 patients, 42 (40%) were men, 36.2% (n=38) were primary school graduates, 22.9% (n=24) were high-school graduates and 21.9% (n=23) were university graduates. Men were more likely to be university graduates than women. Of participants, 92.9% (n=39) of male participants were active workers. The majority of female participants (n=45, %71,4) were housewives. Of total participants, 54.3% had a job. Almost half of the participants (n=50, 47.6%) stated their Socioeconomic Status (SES) as moderate, 37.1% (n=39) said they had low SES (Table 1).

Characteristics		Male		Female		Total	
		n	%	n	%	n	%
Age	≤49 years	5	12	19	30	24	23
	50-54	12	29	17	27	29	28
	55-59	9	21	14	22	23	22
	≥60	16	38	13	21	29	28
Educational status	Illiterate	1	2.4	8	13	9	8.6
	Basic reading-writing skills	0	0	2	3.2	2	1.9
	Primary school	13	31	25	40	38	36
	Secondary school	4	9.5	5	7.9	9	8.6
	High school	8	19	16	25	24	23
	University	16	38	7	11	23	22
Marital status	Married	40	95	49	78	89	85
	Single	0	0	1	1.6	1	0.9
	Divorced	1	2.4	1	1.6	2	1.9
	Widowed	0	0	11	18	11	11
	Separate	0	0	1	1.6	1	0.9
Working	Has a job	39	93	18	29	57	54
	Does not have a job	3	7.1	45	71	48	46
Occupation	Housewife	0	0	44	70	44	42
	Civil servant (white collar)	21	50	12	19	33	31
	Worker (blue collar)	11	26	4	6.4	15	14
	Other	7	17	3	4.8	10	9.5
	Unemployed	3	7.1	0	0	3	2.9
Perceived socioeconomic status	Low	13	31	26	41	39	37
	Low-moderate	4	9.5	2	3.2	6	5.7
	Moderate	17	41	33	52	50	48
	Moderate-high	7	17	1	1.6	8	7.6
	High	1	2.4	1	1.6	2	1.9
Total		42	100	63	100	105	100

Table 1: Sociodemographic characteristics of the participants.

There was a significant relationship between perception of socioeconomic status and perception of health status (p<0.001) (Table 2).

Perception of socioeconomic status	Perception of health status [(a)]			p*
	Poor	Moderate	Good	
Low	20 (12.3)	17 (19.7)	2 (7.1)	<0.001
Low-moderate	1 (1.9)	4 (3.0)	1 (1.1)	
Moderate	9 (15.7)	30 (25.2)	11 (9.0)	
Moderate-high	1 (2.5)	2 (4.0)	5 (1.4)	
High	2 (0.6)	0 (1.0)	0 (0.4)	
Total	33	53	19	
*Chi-square, (a) The figures in brackets show the expected values.				

Table 2: Socioeconomic status perception and health status perception.

The patients with low SES perception had poor health status perception. The mean diabetes duration was 10.85±7.64 years (min 1.00 - max 34.00). The mean HbA_{1C} was 8.13±2.12 (min 5.00- max 15.80).

Of patients, 58.1% (n=61) had hypertension and 28.6% (n=30) had coronary artery disease (CAD). Although there was no significant relationship between duration of diabetes and hypertension (p>0,05) there was a significant relationship between duration of diabetes and coronary artery disease (p=0,001).

The most common diabetes complication was neuropathy (49.5%, n=52) followed by retinopathy (25.7%, n=27), atherosclerotic heart disease (24.8%, n=26), nephropathy (14.3%, n=15), and diabetic foot (6.7%, n=7), in total 69.5% (n=73) of sample group. There was a significant relationship between duration of diabetes and complications (p=0.019) (Table 3).

Duration of diabetes (years)	Complication		p
	Yes	No	0.019
0-10	36 (41.7)	24 (18.3)	
20-Nov	27 (24.3)	8 (10.7)	
21and longer	10 (7.0)	0 (3.0)	
Total	73	32	

Table 3: Diabetes duration and diabetic complications.

The other details were as follows: Only 7.6% (n=8) patients were hospitalized during the last six months for diabetes related reasons, 70.5% (n=74) patients stated that their adherence to medical treatment for diabetes was good, 12.4% (n=13) had emergency care admission for diabetes-related reasons during the last six months.

The majority of patients (87.6%) had diabetes education, mainly provided by a physician or a nurse. Of total, 21.9% (n=23) patients were smokers. Patients who were working out had a better adherence to diabetes treatment (p=0.040) (Table 4).

Patients' working status	Adherence to treatment			p*
	No	Sometimes	Yes	0.040
Not working	1 (0,9)	19 (13,3)	28 (33,8)	
Working	1 (1,1)	10 (15,7)	46 (40,2)	
Total	2	29	74	
*Chi-square				

Table 4: Patients' working status and adherence to treatment.

Patients' working status was also found to be significantly related to Rosenberg Self-Esteem Scale scores (p=0.001) (Table 5 and Table 6)

Working status	Yes	No	p*
Rosenberg Self-esteem Scale total scores	1.3±1.3	2.2±1.4	0.001
*Mann-Whitney U test			

Table 5: Patients' working status and Rosenberg Self-esteem Scale scores.

Rosenberg Self-esteem Scale total scores	Working status		p
	Yes	No	
Low	1 (3.3)	5 (2.7)	0.035
Moderate	20 (23.3)	23 (19.7)	
High	36 (30.4)	20 (25.6)	
Total	57	48	

Table 6: Patients' working status and Rosenberg Self-esteem Scale scores.

The majority of patients stated that nutrition and physical activity are important in diabetes management (Table 7).

Modalities of diabetes treatment	Yes	No
Oral medication	63 (%60,0)	42 (%40,0)
Nutrition	90 (%85,7)	15 (%14,3)
Physical exercise	85 (%80,9)	20 (%19,1)
Insulin	37 (%35,2)	68 (%64,8)
Herbal	15 (%14,3)	90 (%85,7)
Acupuncture	2 (%1,9)	103 (%98,1)

Table 7: Patients' opinions on the most important topic in diabetes treatment.

PACIC: Patients' mean±SD scores for PACIC overall score and subscale scores are presented in Table 8. The highest score was for decision-making and the lowest score was for follow-up and coordination.

PACIC scores	Mean±SD	Min	Max
Overall PACIC score	3.0±0.9	1	5
Patient activation	3.0±1.2	1	5
Delivery system design/ decision support	3.5±1.1	1	5
Goal setting/tailoring	2.9±1.0	1	5
Problem solving/contextual counseling	3.0±1.2	1	5
Follow-up/coordination	2.8±1.0	1	5

Table 8: Score distributions of the PACIC (n=105).

Patient participation and problem solving scores were significantly related to adherence to treatment (p=0.008 and p=0.024, respectively) (Kruskal Wallis H test).

Participants' total scores for Rosenberg Self-esteem Scale are shown in Table 9.

Rosenberg Self-esteem Scale scores	n	%
Low (5-6)	6	5.7
Moderate (2-4)	43	41
High (0-1)	56	53
Total	105	100

Table 9: Patients' Rosenberg Self-esteem Scale total scores (n=105).

There was no significant relationship between the two scales (PACIC and Rosenberg Self-Esteem Scale) and patients' age or gender.

Rosenberg Self-Esteem Scale total scores were significantly related to patient's educational status (p<0.001) (Table 10). Patients with better educational status had lower scores for Rosenberg self-esteem meaning that they had higher levels of self-esteem.

Educational status	No reading-writing	Basic reading-writing	Primary school graduate	Secondary school graduate	High school graduate	University	p*
Rosenberg Self-Esteem Scale total score	2.4±1.3	2.0±1.4	2.3±1.4	2.4±1.4	1.3±1.2	0.7±0.9	<0.001
*Kruskal Wallis H test							

Table 10: Rosenberg Self-Esteem Scale total scores and patients' educational status.

Patients with higher socioeconomic status had lower scores for Rosenberg Self-esteem Scale and the relationship was significant (p<0.001) (Table 11).

Socioeconomic status	Low	Low-moderate	Moderate	Moderate-high	High	p*
Rosenberg Self-esteem Scale total score	2.49±1.47	1.83±0.75	1.30±1.25	0.75±0.71	1.00±1.41	<0.001
* Kruskal Wallis H-Test						

Table 11: Rosenberg self-esteem scale scores and socioeconomic status of patients.

Being hospitalized during the last six months for diabetes-related reasons was significantly related to total score of PACIC (p=0.019) and subscale of goal setting (p=0.010) (Mann Whitney U-Test). Patient's admission to emergency department (ED) for diabetes-related conditions during the last six months was significantly related to Rosenberg total score (p=0.012) (Mann Whitney U-Test). Patients who did not have ED admission had lower scores meaning that they had higher self-esteem.

Rosenberg self-esteem scores were significantly related to presence of diabetic complications (p=0.002) (chi square test). Patients with lower scores (higher self-esteem) had less than expected diabetic complications. Rosenberg self-esteem scores were significantly related to health status perception of the patient (p=0.001) (Table 12). As the self-esteem gets higher health status perception gets better.

Rosenberg self-esteem scores	Perception of health status			
	Poor	Moderate	Good	p*
Low	4 (1.9)	2 (3.0)	0 (1.1)	0.007
Moderate	18 (13.5)	22 (21.7)	3 (7.8)	
High	11 (17.6)	29 (28.3)	16 (10.1)	
Total	33	53	19	
*Chi-square				

Table 12: Rosenberg self-esteem scores and perception of health status.

It was found that there was a significant relationship between Rosenberg Self-esteem scale scores and the presence/absence of diabetic complications (p=0.002) (Table 13).

Rosenberg self-esteem scores	Diabetic complications		
	Yes	No	P*
Low	6 (4.2)	0 (1.8)	0.002
Moderate	36 (29.9)	7 (13.1)	
High	31 (38.9)	25 (17.1)	
Total	73	32	
*Chi-square			

Table 13: Rosenberg self-esteem scores and diabetic complications.

Two questionnaires' total scores were not significantly correlated (p>0,05) (Pearson correlation) (Table 14).

Pearson Correlation	PACIC	p
Rosenberg self-esteem scale	-,004	0,967

Table 14: PACIC and Rosenberg Self-esteem Scale correlation.

Discussion

It can be concluded that better educational status is related to better chronic illness management and better awareness about the chronic illness. As the socioeconomic status of the patients improved their self-esteem also improved. The same relationship is valid for health status perception and self-esteem. Our results are consistent with the existing literature [35]. As 75% of diabetic patients are in less developed or moderately developed countries, improving the socio-economic status of the patients may improve their diabetic outcomes.

The prevalence of hypertension was found as 30% in TURDEP-I and TURDEP-II studies [5,6]. However, our results showed higher prevalence for hypertension in our region. Family physicians should be aware of this fact and should be active in chronic care and prevention. Diabetic patients with higher self-esteem are expected to experience less diabetic complications than the ones with moderate- or low self-esteem. Efforts should be focused on improving self-esteem levels and enabling diabetic patients become better self-managers. Patient educations on diabetes are usually performed in crowded clinics resulting in inefficient patient education sessions [36].

The mean scores on the PACIC domains and total instrument in a study by Wensing [23] were similar to those found in diabetes patients in the USA [22] but higher than those found in patients with osteoarthritis in Germany [26]. The overall PACIC score in a population of patients with coronary heart disease was 3.26 [3]. The score was higher than in the population of patients with cardiovascular disease in Netherlands [37] and patients with osteoarthritis in Germany [31]. The high score in Slovenia were comparable with the results of patients with diabetes in Netherlands and Spain and patients with mental disorders in Germany [3]. In another study, the overall PACIC score was 3.21 [38]. Compared with data for diabetic patients from a US study [22], German

patients not participating in a disease management program fall short in receiving aspects of care on PACIC [38]. The patients' mean age in German study was 70.2 and 70.5 for two subgroups (DMP and non-DMP) that is quite older than our sample. The low scores in the German study were suggested to be related to older age. Our scores were lower than US study however higher than German study (see Table below).

PACIC overall and subdomains	US (Glasgow)	Germany (Peterson)	Netherlands (Wensing)	Germany (Szecsenyi)	Turkey (Ozluk)
Overall PACIC score	3.2	2.4	2.3	2.7	3.0±0.9
Patient activation	3.6	2.6		3.1	3.0±1.2
Delivery system/practice design/ decision making	3.5	3.5		3.3	3.5±1.1
Goal setting/tailoring	3	2		2.5	2.9±1.0
Follow-up/coordination	2.9	2.1		2.7	2.8±1.0
Problem solving/contextual	3.4	2.5		3	3.0±1.2

Table 15: Our scores were lower than US study however higher than German study.

Our results were lower than the ones in the existing literature suggesting that our patients need more programs for chronic illness self-management.

Only very few studies on diabetes with PACIC are found in literature from Turkey. The existing literature has the similar scores with ours; the highest score in decision-making and the lowest score in follow-up/coordination. Our finding on patient participation and problem solving being significantly related to adherence to treatment is consistent with literature.

We could not compare our finding about the correlation between PACIC and Rosenberg Self-Esteem Scale as to our knowledge there was no similar study in the literature. However, self-esteem and quality of life concepts were found to be related; i.e. the higher the self-esteem, the better the quality of life in patients with diabetes [39]. In a study, the subjects before intervention had low self-esteem and after the intervention increased their self-esteem [40]. A study investigated significant relations between the level of illness acceptance, the sense of self-efficacy and self-esteem, and engagement in healthful behavior [16]. It was said that for the type II diabetes group the sense of self-efficacy is a predictor of positive psychological attitude and appropriate eating habits, as well as a predictor for general healthful practices and prophylaxis at the tendency level [16]. Patients enrolling in a disease management program were more likely to receive patient-centered, structured, and collaborative care [38].

Muller et al. showed that patients with complex jobs that offer considerable autonomy are likely to have better health status [41]. Our findings are consistent with this research. Type II diabetic patients would benefit from psychological consultations directed at developing new skills and activities in the patient and his/her family [16]. Self-esteem and chronic illness care assessment in diabetic patients is not a well-studied topic in our country. Further research is needed to emphasize this important health topic.

Strengths

The major strength of this study is that- to our knowledge- it is the only study in Turkey with PACIC and Rosenberg scales.

Limitations

- The patient sample was small and from only one health care organization and therefore our results cannot be generalized.
- The setting was hospital clinic however it would be wiser to re-perform this study in primary care with practicing GPs.
- We did not assess the psychological attitude of the patients. It was found that positive psychological attitude is conditional on an internal sense of being able to achieve one's goals, and on greater engagement in the chosen course of action [16].

Conclusion

It can be concluded that this group of Turkish patients with type 2 diabetes mellitus had high levels of self-esteem however low levels of patient assessment for chronic illness care. Patients and primary care professionals should focus on these two issues, as the better management of this chronic condition is essential for better quality of life and better health outcomes. Interventions should be planned and implemented and further research is required.

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