Relationship between Treatment Satisfaction and Medication Adherence among Primary Healthcare Attendants with Type 2 Diabetes in Port Said Governorate

Nada E. Abd Elsalam[1*], Hazem A. Sayed Ahmed[2], Ahmed Gharib Abdelrahman[2], Nahed A. El-Dahshan[2]

[1] Primary Health Care, Ministry of Health and Population, Port Said, Egypt

[2] Family Medicine department, Faculty of Medicine, Suez Canal University, Ismailia, Egypt

Abstract:

Background: Despite the importance of the relationship between treatment satisfaction and medication adherence, related studies were scarce among patients with Type 2 Diabetes mellitus (T2DM) in primary health care (PHC) facilities. **Objectives:** To assess the relationship between treatment satisfaction and medication adherence, and to evaluate the associated factors of medication adherence among T2DM patients attending PHC settings in Port Said governorate. **Methods:** This cross-sectional study included 319 T2DM patients attending five PHC settings from February 2021 to August 2021; Data was collected using a semi-structured questionnaire, which include 6 parts: socio-demographic data, disease profile, 8-item Diabetes Treatment Satisfaction Questionnaire (DTSQ-8), 8-item Morisky Medication Adherence Scale (MMAS-8), Medication knowledge questionnaire-5, and Healthcare relationship (HCR) trust scale. **Results:** Treatment satisfaction correlated significantly and positively with medication adherence (rho=0.299, p<0.001). Medications adherence is associated positively with older age (β=0.242, p<0.001), having retinopathy (β=0.145, p=0.011) and coronary artery disease (CAD) (β=0.125, p=0.019). Also, being on insulin alone or combined with oral hypoglycemic agents (OHAs) (β=0.115, p=0.030), higher treatment satisfaction (β=0.194, p=0.002) and higher physician trust scores (β=0.145, p=0.011). However, it was associated negatively with a history of stroke (β=-0.199, p<0.001), and higher glycated hemoglobin (HbA1c) levels (β=-0.185, p=0.001). **Conclusion:** Increased diabetes treatment satisfaction was associated with higher medication adherence among T2DM patients.

Keywords: Adherence, Primary care, Treatment satisfaction, Type 2 diabetes

Introduction:

Diabetes is a common health problem in the world with high mortality, serious morbidity, and economic burden. T2DM is the most common type of diabetes, accounting for more than 90% of cases. Diabetes prevalence was estimated to be 20.9% of the Egyptian population aged 20-79 years.(1)

Adherence to diabetic medications is considered a major factor in diabetes management. Higher levels of adherence were linked to better glycemic control, fewer emergency room visits, fewer hospital admissions, and lower diabetes-related expenses. Despite these advantages, the overall rate of medication adherence in Patients with T2DM was suboptimal.(2)

A meta-analysis showed that the prevalence of diabetes medication adherence ranged from 38.5 to 93.1 %. (3) In another Meta-analysis, adherence rates in the Middle East and North Africa region ranged from 16.7% to 98.6%, with an average of 57 %.(4)

*Corresponding author: nadaaemad92@gmail.com

Egyptian studies revealed that diabetes medication adherence ranged from 44.7%-74% among PHC patients.[5,6] In Egypt, the prevalence of optimal medication adherence ranged from 61.1% to 74% among patients with T2DM.[5,7]

Many factors influence antidiabetic medication adherence, including socioeconomic factors (e.g., financial constraints), patient-related factors (e.g., disease or medication illiteracy), condition-related factors (e.g. Depression), treatment-related factors (e.g., complexity, multiple daily doses, price, or adverse effects), and system-related factors (e.g., quality of the relationship between patients and health care providers).[3,8,9]

A cross-sectional study found that the majority of diabetic patients with sub-optimal adherence to diabetes medications in primary care settings were females, illiterate, and those are not cover by health insurance.[6]

An Egyptian study found that the patient-healthcare provider relationship was the only predictor of adherence to oral hypoglycemic medications.[5] Gaps in knowledge about diabetes and OHAs had been reported as barriers of adherence to OHAs among individuals with T2DM in a Saudi study.[10]

Treatment satisfaction is a patient-reported outcome. It can be used to assess the quality of diabetes care. Improvement in diabetes treatment satisfaction may improve patients' self-efficacy and treatment adherence, resulting in long-term control of glycemic levels and a lower risk of diabetic complications. Diabetes treatment satisfaction was positively correlated with medication Adherence.[11, 12]

Patient satisfaction is also associated with trust in physician.[13] Primary care is a central point for diabetes management.[14] Family physicians should cooperate with the patient to identify and resolve important barriers to diabetes medication adherence. They can work with patients to come up with one or more solutions that they are willing and able to implement and continue long-term.[15]

Despite the importance of the relationship between treatment satisfaction and medication adherence, related research is scarce among Egyptian patients with T2DM in PHC settings, so this study was conducted to assess the relationship between treatment satisfaction and medication adherence among individuals with T2DM attending PHC facilities in Port Said governorate.

Methods:

Study design, setting, and sampling: A cross-sectional study was conducted at PHC settings affiliated with the General Authority of Healthcare in Port Said governorate,

Egypt. The study was carried out from February 2021 to August 2021.

The following formula was used for calculating the sample size: $N = ([Z_\alpha+Z_\beta]/ ½ \log[(1+r)/(1-r)])^2 + 3$,[16] **n** = sample size, $\mathbf{Z_{\alpha/2}}$ = 1.96 (The critical value that divides the central 95% of the Z distribution from the 5% in the tail), **r** = correlation coefficient between diabetes treatment satisfaction and hypoglycemic medications adherence = 0.363 [12], So, by calculation, the sample size was equal to 319 patients after the addition of 10% drop-out proportion.

A total of 319 participants with T2DM were enrolled from simple random selected five PHC settings. Participants were recruited by a convenient sampling technique.

The researchers e included type 2 diabetic patients who were aged 40 years or more, diagnosed with T2DM for at least 1 year, whose medications had not been changed for at least 3 months, and who agreed to participate in the study. Women with gestational diabetes, patients with mental or cognitive disorders, individuals with severe major complications (such as renal failure on dialysis, blindness, and limb amputation), and patients who refused to participate in the study were excluded.

Tools and measurements of the study: All participants were interviewed, and their medical records were revised. Data was collected by using a questionnaire that consists of 6 parts: socio-demographic data, disease profile and measurements, and the Arabic versions of the DTSQ, MMAS-8, self-reported medication knowledge questionnaire, and HCR trust scale.

Socio-demographic data includes age, marital status, educational level, employment status, and income. The disease profile includes a duration of DM (years), smoking status, co-morbidities, diabetes-related complications, current diabetes medications, number of other medications, and family history of DM. Measurements include weight, height, BMI which was computed by dividing the body weight (in kg) by the square root of the height (in meters), and recent HbA1c values (within 3 months). Adult and older adult patients with controlled glycemic targets were identified by HbA1c levels of less than 7% and 7.5%, respectively.[17]

The DTSQ measures overall satisfaction with the current treatment and includes eight elements related to diabetes treatment over the previous weeks. Each item is rated on a 7-point Likert scale ranging from 0 (very dissatisfied) to 6 (very satisfied).

Glycemic control is measured rather than satisfaction in items 2 and 3 (perceived hyperglycemia and perceived

hypoglycemia). These items are rated on a scale of 0 to 6, with 0 indicating "never" and 6 indicating "most of the time." The DTSQ total score (range 0–36) is calculated by summing up all of the scores, except for items 2 and 3. Higher scores indicate higher treatment satisfaction and vice versa.[18]

The Arabic version of the DTSQ was found to be a valid and reliable tool for assessing treatment satisfaction in Arabic diabetes patients. DTSQ scores had inverse correlations with fasting blood glucose and HbA1c (Pearson's r= -0.333 and r= -0.401, respectively, $p<0.01$). The construct validity and scale criterion were both found to be acceptable.[19]

The MMAS-8 consists of eight components. Except for the last item, which contains a 5-level Likert-type response, each item has a yes or no response. The total score range is 0 to 8. A score of 8 indicates excellent adherence, 6-7 indicates moderate adherence, and less than 6 indicates poor adherence.[20]

The Arabic version of the MMAS-8 demonstrated an acceptable internal consistency (Cronbach's alpha= 0.70) and a moderate split-half reliability (Pearson's r= 0.65). There was a significant relationship between medication adherence and glycemic control, with a moderate effect size (Cramer V statistic= 0.34), indicating satisfactory known-group validity.[21]

The medication knowledge questionnaire (MKQ) is a five-item scale in which patients are asked about how well they understand the names, purpose, recommended doses, frequency, and side effects of their medications.[22]

The Arabic version of the MKQ was a valid instrument and had acceptable reliability (Cronbach's alpha= 0.70).[23] The 13-item HCR trust scale-Revised, was used to assess trust in family physicians. All the items are graded on a scale of 0 to 4, with one being reversed (item 12).

Higher scores indicate a higher level of trust in healthcare practitioners. This scale was translated to Arabic language and validated based on internationally approved methodological guidelines. Its Arabic version had excellent reliability (Cronbach's alpha= 0.90). [23,24]

Data management:

Data were analyzed by version 26 of the statistical package for social sciences (SPSS). All categorical variables were summarized as frequencies and percentages (%). The distributions of continuous variables were tested for normality with the Shapiro-Wilk test.

The median and interquartile ranges were used for the not-normally distribution variables. Mann-Whitney and Kruskal-Wallis tests were used to estimate the associations of medication adherence with the demographic and clinical characteristics of the study participants.

Spearman's correlation test was used to assess the relationship of medication adherence with treatment satisfaction, medication knowledge, family physician trust and HbA1c, additionally to investigate the association with age, education, income, duration of diabetes, type of diabetes medications, and BMI.

Multiple linear regression analysis was used to assess the predictors of treatment satisfaction and medication adherence. P-values < 0.05 were considered significant in all statistical analyses.

Ethical consideration:

The study was approved by the Research Ethics Committee at the Faculty of Medicine, Suez Canal University, Ismailia, Egypt (Reference number 4099/2020) on 17/2/2020.

Relevant authorities were contacted for permission to conduct the study in PHC settings affiliated with the General Authority of Healthcare in Port Said governorate. Informed consent was obtained from the participants, after clarifying the aim of the study.

Results:

The mean age of the patients was 59.66 ± 7.87 years, about half of them were <60 years old, and more than half of them were females. About 38.2% of the participants were retired, and 63.01% of them have graduated from university or had a post-graduate education.

About 40.44% of the patients perceived their income as sufficient. About one out of ten (9.09%) were smokers, and 64.26% had a family history of diabetes. The mean disease duration was 10.57±6.25 years. About 59.56% were on oral hypoglycemic drugs and 29.15% were on insulin therapy.

The most reported diabetes-related complications among the study participants were neuropathy, retinopathy, and CAD (59.9%, 24.8%, and 24.8% respectively). Cerebrovascular stroke was the least reported complication 1.9%. The most frequent comorbidities were dyslipidemia (69.9%) and hypertension (61.80%).

Regarding Antidiabetic medications, 68.9% of the participants were on OHAs, while 31.1% of them were on insulin therapy; 22.6% were on insulin alone and 8.5% were on insulin with OHAs. About 20.1% of the participants had low adherence

to antidiabetic therapy, however, 42.9% and 37% of them had moderate or high medication adherence, respectively.

The mean BMI was 31.89 ± 5.56 kg/m^2, 79.9% of the participants had optimal medication adherence levels and 24.8% of them had good glycemic control with a mean of HbA1c (7.75% ±1.07%). The mean of diabetes treatment satisfaction was 27.99 ± 6.63.

Adherence to antidiabetic medications was statistically significantly associated with age (p<0.001), gender (p=0.001), occupation (p<0.001), family history of diabetes (p<0.001) neuropathy (p=0.001**)**, stroke (p<0.001), and BMI (p<0.010).

There was a statistically significant positive weak correlation of medication adherence with diabetes treatment satisfaction (rho= 0.299, p<0.001), and physician trust (rho= 0.267, p<0.001). However, medication adherence had a negative weak correlation with elevated HbA1c level (rho= -0.399, p<0.001) (Table-1).

Linear regression analysis showed that medication adherence was significantly higher among older aged participants (β= 0.242, p<0.001), those with retinopathy (β= 0.145, p=0.011), CAD (β= 0.125, p=0.019), participants who were on insulin regimens alone or combined with OHAs (β=.0115, p=0.030), with higher treatment satisfaction (β=0.194, p=0.002) and higher physician trust scores (β= 0.145, p=0.011), with participants who had no history of stroke (β= -0.199, p<0.001) and lower HbA1c levels (β= -0.185, p=0.001) (Table- 2).

Discussion:

To the best of knowledge, this was the first study to assess the relationship between treatment satisfaction and medication adherence in Egypt. The present study found that diabetes treatment satisfaction correlated positively with adherence to antidiabetic medications.

Diabetes treatment satisfaction also was a predictor for antidiabetic medication adherence. In the current study, diabetes treatment satisfaction had a positive weak correlation with medication adherence among PHC patients with T2DM. This finding was consistent with that of Saisho.[12]

A Nigerian study revealed that diabetes treatment satisfaction was positively associated with adherence to antidiabetic medications, but the strength and direction of this association were not assessed.[25]

A Palestinian study found a weak positive correlation between the effectiveness domain of treatment satisfaction and adherence to OHAs,[26] while a Lebanese study found positive weak correlations between two domains of treatment

satisfaction (the effectiveness and side effects) with adherence to OHAs.[27]

A Chinese study found that the global treatment satisfaction domain was positively associated with medication adherence among T2DM patients at a community health service center.[28]

A recent Palestinian study found that the effectiveness domain of treatment satisfaction was significantly positively associated with medication adherence among PHC patients with T2DM.[29]

Authors of previous studies used a different tool to assess treatment satisfaction and did not assess the total score of treatment satisfaction.

These findings suggest that increased treatment satisfaction can lead to better medication adherence, and better medication adherence can lead to higher patient satisfaction with their treatment.

So, it is important to assess and increase patients' satisfaction with their treatment by enabling patients to take responsibility for their health, safeguarding patients' privacy, delivering respectful treatment, responding to patients' needs and preferences, attentive listening, and ensuring transparency in information sharing to hopefully, improve clinical outcomes.

The current study showed a positive significant association between age and medication adherence. This finding was supported by the results of a Palestinian study.[26]

This result could suggest that older patients were more conscious of the risks of non-adherence than younger patients. However, in a Cameroon study, patients above the age of 60 were found to be significantly more likely to be non-adherent.[30] While, Malaysian and Lebanese studies found no relationship between age and medication adherence.[27,31]

The current study found that having retinopathy or CAD was significantly positively associated with higher medication adherence, while patients who had no history of stroke were more adherent significantly.

This could be related to the patients who were concerned about the worsening of their vision and heart condition, and were motivated to be more adherent. This was in line with the findings of a Chinese study.

However, an Ethiopian study showed that the presence of diabetes complications was positively associated with non-adherence.[28,32]

The present study revealed that using insulin regimens was significantly associated with higher adherence levels.

This surprising finding could suggest that patients who required treatment with insulin as a result of the progression of the disease require more adherence to their medications to meet their glycemic goals.

This finding was not consistent with the findings of a Chinese study which found that receiving insulin therapy and an increased quantity of prescribed drugs were associated with suboptimal adherence levels. Also, a Cameron study found that using insulin therapy alone was associated with suboptimal adherence levels.

However, A Malaysian study found no relation between adherence and the type of medication or the use of insulin. Other studies in Lebanon and Palestine revealed no association between medication adherence and the number of OHAs.[26-28, 30,33]

The present study revealed that physician trust score was significantly positively associated with medication adherence level. This result was corresponding to the results of an Egyptian study which concluded that the relationship between the patient and the healthcare professional was the most important predictor of good adherence among PHC patients with T2DM.

This outcome highlights the crucial relevance of good communication between the patient and the healthcare providers.[5] Family physicians should work to strengthen their relationships with their patients, involve patients in decision making, and build more trust aiming to improve treatment satisfaction and medication adherence, additionally to achieve optimal glycemic control among primary care patients with T2DM.

The current study displayed a negative significant association between HbA1c and adherence levels. This was consistent with the results of a Malaysian study. Also, a recent Egyptian study reported that good glycemic control was significantly associated with optimal adherence levels. In a Lebanese study, medication adherence was found to be significantly associated with fasting blood glucose levels, but not with HbA1c levels.[7,27,33]

Family physicians should assess and improve adherence to antidiabetic therapy and should also pay more attention to younger patients, those patients with diabetes-related complications (e.g. stroke), lower treatment satisfaction and higher HbA1c. Future research is needed to evaluate the influence of various patient-centered interventions on medication adherence among primary care patients with T2DM.

Limitations of the study:

The cross-sectional design of this study could not determine the causal relationship

between variables. A further longitudinal study is needed to evaluate the causal relationship between treatment satisfaction and medication adherence among patients with T2DM treated in Egyptian PHC settings.

The generalization of the current study's findings is limited by the lack of randomization. The use of a subjective questionnaire such as the MMAS-8 scale might increase the possibility of information bias e.g. recall bias.

Conclusion:

Diabetes treatment satisfaction was associated positively with medication adherence was among the study participants. Medication adherence associated positively with age, retinopathy, and CAD, taking insulin either alone or with OHAs, treatment satisfaction score and physician trust score, but associated negatively with a history of stroke, and HbA1c level.

Conflict of interests: None.

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Table (1): Association of medication adherence with socio-demographic and clinical characteristics among the study participants (n=319)

Variable	All participants	Correlation coefficient	P-value
Age (years), median (IQR)	59 (54-65)	0.229	**<0.001***
▪ <60 years	163 (51.1%)		
▪ ≥60 years	156 (48.9%)		
Gender, n (%)			
▪ Male	143 (44.83 %)		**0.001***
▪ Female	176 (55.17 %)		
Marital status, n (%)			
▪ Single	3 (0.94 %)		0.152
▪ Married	255 (79.94 %)		
▪ Divorced	3 (0.94 %)		
▪ Widow	58 (18.18 %)		
Education, n (%)			
▪ Illiterate	21 (6.58%)	-0.098	0.080
▪ Read & write	20 (6.27%)		
▪ Elementary /intermediate	77 (24.14%)		
▪ University graduate/post-graduate	201 (63.01%)		
Occupation, n (%)			
▪ Not working or housewife	68 (21.3%)		**<0.001***
▪ Unskilled worker	9 (2.8%)		
▪ Skilled worker	9 (2.8%)		
▪ Semi-professional	90 (28.2%)		
▪ Professional	21 (6.6%)		
▪ Retired	122 (38.2%)		
Income, n (%)			
▪ Non-sufficient	79 (24.76%)	-0.028	0.622
▪ Barely sufficient	84 (26.34%)		
▪ Sufficient for normal and emergency	129 (40.44 %)		
▪ Sufficient & saved	27 (8.46 %)		
Smoking, n (%)			
▪ Smoker/passive smoker	29 (9.09%)		0.085
▪ Non-smoker	244 (76.49%)		
▪ Former smoker	46 (14.42%)		
Family history of diabetes, n (%)	205 (64.26 %)		**<0.001***
Duration of diabetes (Years)	10.57±6.25	0.016	0.777
Diabetes complications, n (%)			
▪ Retinopathy	79 (24.8%)		0.706
▪ Nephropathy	26 (8.2%)		0.731
▪ Neuropathy	191 (59.9%)		**0.001***
▪ Stroke	6 (1.9%)		**<0.001***
▪ Coronary artery disease	79 (24.8%)		0.702

Table (1) *Continued*: Association of medication adherence with socio-demographic and clinical characteristics among the study participants (n=319)

Variable	All participants	Correlation coefficient	P-value
Co-morbidities, n (%)			
▪ Hypertension	197 (61.80%)		0.702
▪ Dyslipidemia	222 (69.9%)		0.545
Medication for diabetes, n (%)		0.076	0.175
▪ Oral hypoglycemic agents	190 (59.56%)		
▪ Insulin	93 (29.15%)		
▪ Insulin plus OHAs	36 (11.29%)		
BMI, median (IQR)	31.40 (27.7-35.5)	-0.253	**<0.001***
▪ Normal	21 (6.6%)		
▪ Overweight	108 (33.9%)		
▪ Obesity	190 (59.6%)		
Good glycemic control, n (%)	79 (24.8%)		**<0.001***
HbA1c (%), median (IQR)	7.80 (7-8.5)	-0.338	**<0.001***
MKQ total score, median (IQR)	21 (19-23)	0.008	0.881
HCR trust total score, median (IQR)	40 (30-45)	0.267	**<0.001***
DTSQ total score, median (IQR)	29 (24-34)	0.299	**<0.001***

BMI, Body Mass Index; DTSQ, diabetes treatment satisfaction questionnaire; HbA1c, glycated hemoglobin; HCR, Healthcare relationship trust scale; IQR, Interquartile range; MKQ. Medication knowledge questionnaire; OHAs, Oral hypoglycemic agents.

*. P is significant at level < 0.05; Sperman's correlation, Mann-Whitney U, and Kruskal-Wallis tests

Table (2): Predictors of diabetes medication adherence among the study participants (n=319)

Variables	Medication adherence			
	β	95% CI for β		P-value
		Lower Bound	Upper Bound	
Age (Years)	0.242	0.020	0.071	**0.000***
Gender (Reference category=Male)	-0.020	-0.425	0.307	0.751
Marital status (Reference category=Unmarried)	-0.104	-0.801	0.032	0.070
Education level (Reference category=Illiterate)	-0.123	-0.417	0.001	0.051
Occupation (Reference category=Not working)	0.118	-0.005	0.156	0.067
Duration of diabetes (Years)	-0.113	-0.058	0.005	0.096
Family history (Reference category=Absent)	-0.064	-0.527	0.132	0.239
BMI (kg/m^2)	0.016	-0.024	0.032	0.764
Retinopathy (Reference category=Absent)	0.145	0.116	0.880	**0.011***
Nephropathy (Reference category=Absent)	-0.080	-1.027	0.160	0.152
Neuropathy (Reference category=Absent)	-0.061	-0.505	0.139	0.264
Coronary artery disease (Reference category=Absent)	0.125	0.071	0.789	**0.019***
Stroke (Reference category=Absent)	-0.199	-3.356	-0.979	**0.000***
Hypertension (Reference category=Absent)	-0.078	-0.553	0.077	0.138
Type of diabetes medications (Reference category= OHAs)	0.115	0.035	0.660	**0.030***
HbA1c (%)	-0.185	-0.403	-0.106	**0.001***
MKQ total score	0.060	-0.030	0.078	0.382
HCR trust total score	0.145	0.005	0.037	**0.011***
MMAS-8 total score				
DTSQ total score	0.194	0.016	0.071	**0.002***

β, Standardized beta coefficients; BMI, Body Mass Index; CI, Confidence interval; DTSQ, diabetes treatment satisfaction questionnaire; HbA1c, glycated hemoglobin; HCR, Healthcare relationship trust scale; MKQ. Medication knowledge questionnaire; OHAs, Oral hypoglycemic agents.

Linear regression model of medication adherence: the dependent variable is the 8-item Morisky Medication Adherence Scale (MMAS-8) total scores: Anova Tests for Model fit: F = 6.902, p = <0.001; R Square 0.305.*. P is significant at level < 0.05

الملخص العربي

علاقة الرضا بالعلاج مع الالتزام بالمداواة بين المترددين على الرعاية الصحية الأولية المصابين بمرض البوال السكري من النوع الثاني في محافظة بورسعيد- مصر

ندى عماد عبد السلام[1]، حازم أحمد سيد[2]، أحمد غريب عبد الرحمن[2]، ناهد أمين الدهشان[2]

[1] الرعاية الصحية الأولية، وزارة الصحة، بورسعيد، مصر

[2] قسم طب الأسرة، كلية الطب، جامعة قناة السويس، الاسماعيلية، مصر

الخلفية: يعتبر مرض السكري من الأمراض المزمنة الرئيسية والخطيرة التي لها تأثير كبير على الأفراد والمجتمعات.قد يؤدي تحسين الرضا عن علاج مرض السكري إلى تعزيز الكفاءة الذاتية للمرضى والالتزام بالعلاج ، مما يؤدي إلى التحكم في نسبة السكر في الدم على المدى الطويل وتقليل مخاطر الإصابة بمضاعفات مرض السكري. ارتبط الرضا عن علاج مرض السكري ارتباطا إيجابيا بالالتزام بالأدوية. **الأهداف**: أجريت هذه الدراسة لتقييم العلاقة بين الرضا بالعلاج والالتزام بالأدوية بين الأفراد المصابين بالسكري من النوع الثاني في منشآت الرعاية الصحية الأولية بمحافظة بورسعيد. **المنهجية**: دراسة مقطعية على 319 مريضاً بالسكري من النوع الثاني المترددين على وحدات ومراكز الرعاية الصحية الأولية بمحافظة بورسعيد. تم اختيار مرضى السكري من النوع الثاني الذين تبلغ أعمارهم 40 عامًا أو أكثر وتم تشخيصهم بمرض السكري من النوع الثاني منذ عام واحد على الأقل ولم يتم تغيير أدويتهم الخافضة لمرض السكر لمدة ثلاثة أشهر على الأقل للمشاركة في هذه الدراسة. تم التقييم عن طريق استمارات شبه منظمة. **النتائج:** كشفت الدراسة أن متوسط درجة الرضا بالعلاج (27.99 ± 6.63)، ونسبة انتشار الالتزام العالي (37٪) في حين أن (24.8٪) من المشاركين في الدراسة لديهم تحكم جيد في نسبة السكر في الدم. ارتبط الرضا عن علاج مرض السكري ارتباط إيجابي ضعيف مع الالتزام بالأدوية (معامل الارتباط=0.299، القيمة الاحتمالية<0.001). **الخلاصة:** ارتبط زيادة الرضا عن علاج مرض السكري بزيادة الالتزام بالأدوية بين مرضى السكري من النوع الثاني. لذلك يوصى بتقييم الرضا عن العلاج والالتزام بالأدوية لدى مرضى الرعاية الصحية الأولية المصابين بمرض السكري عندما تكون نسبة السكر في الدم لدى المرضى غير متحكم بها لتحسين جودة الرعاية المقدمة لمرضى السكري.