Medical Science

pISSN 2321–7359; eISSN 2321–7367

Patients Knowledge, attitude, and practice (KAP) towards diabetic complications in Saudi Arabia

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To Cite:
Alzaylaee S, Babsail L, Alshamrani S, Falemban AH, Alsanosi SM, AL-Hindi Y. Patients Knowledge, attitude, and practice (KAP) towards diabetic complications in Saudi Arabia. Medical Science 2022; 26:ms297e2385.
doi: https://doi.org/10.54905/disssi/v26i125/ms297e2385

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Peer-Review History
Received: 05 July 2022
Reviewed & Revised: 06/July/2022 to 19/July/2022
Accepted: 20 July 2022
Published: 23 July 2022

Peer-review Method
External peer-review was done through double-blind method.

URL: https://www.discoveryjournals.org/medicalscience

ABSTRACT

Background and aim: As the prevalence of diabetes is increasing in Saudi Arabia. Moreover, by 2045 researchers expected that the number of diabetic patients will increase to more than half of the Saudi population. Diabetes is a complicated disorder if not controlled and well managed will lead to multiple complications and increase mortality. Therefore, we needed to assess knowledge, attitude, and practice towards the diabetic complications. *Methods:* Across sectional survey was done from December 2021 to June 2022 with a total sample of 202 diabetic patients in Saudi Arabia. *Results:* the study participants aged was 51 and above years old. Moreover, female participants were 58.9% more than males 41.1%. 93.1% of them had their primary and elementary education. 55.9% have been diagnosed with diabetes for more than 10 years. Around above 50 % of the study subjects had well balanced knowledge and attitude towards their diabetic complications however, they needed more education in the practice side. *Conclusion:* patient with diabetic had good knowledge and attitude but needed more emphasize in the practice to decrease their complication rate.

Keywords: diabetes, complications, Knowledge, attitude, practice.

1. INTRODUCTION

Diabetes mellitus (DM) prevalence is increasing rapidly at a threatening pace globally. According to the 2011 World Health Organization, 346 million people were diagnosed with DM worldwide, of which 90 percent had Type 2DM. This figure is directed to be elevated to 380 million people by 2025 (Jasper et al., 2014). An association called American Diabetes Association (ADA) describes diabetes as a category of metabolic disorders that contribute to insulin secretion and insulin action defects or both (Chawla et al., 2016). DM contributes to multiple classical symptoms and complications that can cause death if untreated (Alshali et al., 2020). Urbanization, lack of physical activity, sedentary lifestyle and obesity are few attributable factors for DM (Stuckey et al., 2015). If not all most of the causes can be changed by healthy

lifestyle habits, proper patient adherence to their medications and complications screening.

In view of this, ADA guidelines stipulate the importance of strict glycemic regulation, a level of HbA1C (glycosylated hemoglobin) of less than 7% in patients with diabetes to reduce the incidence of micro and macro vascular complications (Al-Qazaz et al., 2010). Insufficient knowledge of the disease, prognosis, complications, and treatment leads to poor glycemic control, which in turn results in increased morbidity (Norhafiza et al., 2012). This increases the need for proper education regarding lifestyle changes (training and food), adherence to medication and regular screening in patients suffering from DM (Surendranath & Nagaraju, 2011). The present study was carried to look in depth into the knowledge, attitude, and practice in diabetic patients regarding Complications.

2. METHODS

This study was conducted using a cross sectional survey submitted throw a google form questionnaire to assess patients with diabetes knowledge, practice, and attitude towards their diabetic complications. We included all patients diagnosed with type 1 and 2 DM. Patients with other comorbid diseases were excluded. The sample size was based on calculating the equation modeling that is subjected to be 200 samples. In the study the sample size is 202 patients. This study was approved by the IRB committee of Umm Al-Qura University with number (HAPO-02-K-012-2021-10-780) from the college of medicine. The survey included 36 questions, 8 for Knowledge, 8 for Attitude and 20 for Practice. Consents of agreeing to participate were taken from all patients prior answering the survey. The study was started from December 2021 to June 2022.

Statistical Analysis

This study after collecting the data they all were analyzed using SPSS (25, USA) programme. Descriptive statistics were used for all variable and any value less than 0.05 were assigned statistically significant. Pearson Chi-square test to measure any differences

3. RESULTS

Basic information of the subjects in the study

As presented in (Table 1) participants of this study were mostly aged 51 and more about 83.1%. Female 58.9% were more than males 41.1%. Most of them had their primary and elementary education 93.1%. In addition, the majorities have been diagnosed with DM 10 years and more were 55.9%. Around 61.9 % of the patient did not have any job to work with, and the patient who had a job 25.7% worked for government and 12.4% worked for private section.

Table 1 demographic characteristic of diabetic patients

Demographics	Numbers (%) N= 202
Age (Years)	
12-29	11(5.4%)
30-50	23 (11.3%)
51 or more	168(83.1%)
Gender	
Female	119 (58.9%)
Male	83(41.1%)
Educational level	
No education	31 (15.3%)
Elementary and Primary education	92 (93.1%)
Undergraduate and postgraduate	79(45.5%)
First time diagnosed with diabetes (years)	
Newly diagnosed	10(4.9%)
From two to 5 years	23(11.3%)
From 5 to 10 years	56(27.7%)
More than 10 years	113(55.9%)
Nationality	

Saudi	191(94.6%)
Non-Saudi	11 (5.4%)
Work	
Governmental	52(25.7%)
Private	25 (12.4%)
None	125 (61.9%)

As presented in (Table 2) that shows statements of Knowledge towards diabetes complications. Around above than 50 % of the patients had good knowledge about what complications or symptoms diabetic patients can suffer from? As demonstrated in (Table 3) the statements of attitude, most patients have good attitude towards their diabetes and the complications, as they checkup their health as eye, kidneys, and feet annually ($p<0.05$). They are taking their insulin regularly; moreover around 80.7% of them attend clinics when they suffer from any symptoms and complications.

Table 2 Statements of Knowledge and their answers from the patients (%)

Statement	Yes	No	p-value
Do you know what the diabetic foot condition is?	57.9%	42.1%	0.12
Do you have some knowledge about the symptoms of diabetic foot?	49%	51%	0.23
Do you know the reasons which can lead to diabetic foot?	47.5%	52.%	0.14
Do you know if the diabetes disease problems are not dealt with, it could lead to health complicated issues?	93.1%	6.9%	0.03
Do you know the diabetic patient could face the diabetic coma, dizziness, or syncope?	93.1%	6.9%	0.03
Do you know the diabetic patients are more susceptible for inflammation like pneumonia urinary infection?	60.4%	39.6%	0.01
Do you know the diabetic patients should monitor his cholesterol level?	77.7%	22.3%	0.012
Do you know the diabetes diseases are prevalent in Saudi Arabia?	93.1%	6.9%	0.03
Do you know the diabetic patients are more exposed to teeth problems more others?	77.2%	22.8%	0.012

Table 3 Statements of Attitude and their answers from the patients (%)

Statements	Yes	No	p-value
Do you check your feet daily?	38.6%	61.4%	0.011
Did you take your insulin regularly?	72.8%	27.2%	0.013
Do any of your family members have experience to deal with diabetic complication?	69.3%	30.7%	0.01
Do you know if the diabetes disease problems are not dealt with, it could lead to health complicated issues?	41.6%	58.4%	0.21
Did you attend any of awareness lectures for diabetic disease in the past?	30.7%	69.3%	0.012
Did you perform a screening for foot in the last year?	41.6%	58.4%	0.21
Did you carry out an eyes test in the last year?	64.9%	35.1%	0.01
Did you carry out a kidney test in the last year?	55.9%	44.1%	0.24
Do you visit your doctor if you notice any of diabetic complication?	80.7%	19.3%	0.001

Figure 1 demonstrates the mean and standard deviation of knowledge, practice and attitude of the diabetic patients who participated in the study compared by gender. We found that female was more knowledgeable and have good attitude ($p < 0.05$) than male, but they were equal in practice.

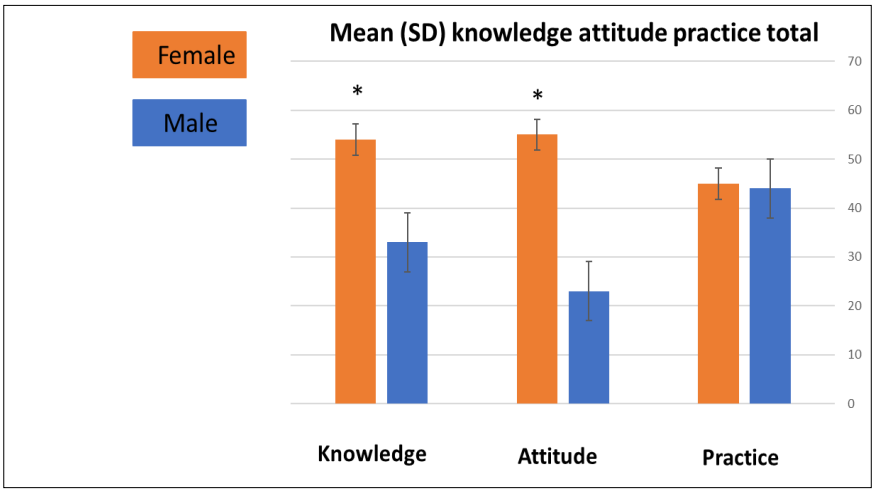

Figure 1 Mean (SD) of knowledge, attitude, and practice in diabetic patients compared by gender. N=202.

4. DISCUSSION

Our main aim of this study was to assess the knowledge, attitude and practice of patients suffering from diabetes in Saudi Arabia regarding their complications. The main results showed that above fifty percent of the patients with diabetes have good knowledge, attitude, and practice. This seems to be essential as diabetic complications can lead to multiple issues in the future. Most of them knew that the prevalence of DM in Saudi Arabia is increasing as well as the incidence of complications among them (Khan et al., 2010). By reviewing the literature, we did not see any study don this assessment for all complications of diabetes; however some studies assessed this for one or two complications. Diabetic retinopathy and diabetic foot, for instance, are among the most studied diabetic complications regarding KAP.

A study done in Riyadh assessed the KAP towards retinopathy and found that it was very low among the diabetic patient and more educational intervention is essential to improve the knowledge, attitude and practice towards eye checkup for diabetes (Alyahya et al., 2020). Unlike this research a similar one done in Hail province showed that most of the patients were very aware and knowledgeable about their wye condition and any complication that might occur in it (Alzarea, 2016). Another study was done in Al-Kharj showed that diabetic patients had good knowledge and attitude towards diabetic foot and its complication however they lacked practice and needed more education and follow-up (Shimam et al., 2021). Interestingly we found in our study that females were more knowledgeable and have good attitude than male however they were equal in practice and booth needed more educational support towards the practice part towards their complications. This can be explained by that female's number who participated in this study were more than males.

We had some limitations through this study as facing diabetic patients with many questions was very troublesome to some of them. Another is that we did not look at any file of data therefore in the future it is essential to investigate this further to check their glycemic control and general health.

5. CONCLUSION

Our survey highlights the importance of educational interventions toward practice for diabetic complications as most of these patients are in need for this. Improving practice and checkup for diabetics will eventually improve their general health and decrease hospital admissions, costs and stay at hospitals as well as decreasing mortality rates.

Acknowledgment

We thank the participants who were all contributed to the sample of the study.

Author Contribution

Shaima Alzaylaee, Lamis Babsail, Shahad Alshamrani, and Yosra AL-Hindi contribute to study conception, supervision, project administration, and revision.

Shaima Alzaylaee, Lamis Babsail, Shahad Alshamrani, Alaa H. Falemban, Safaa M. Alsanosi and Yosra AL-Hindi contribute to the literature review and writing/ manuscript preparation: writing the initial draft, data collection, formal analysis and data presentation, data collection.

Ethical Approval

The study was approved by the Medical Ethical Committee of Umm Al-Qura University with number (HAPO-02-K-012-2021-10-780).

Funding

This study has not received any external funding.

Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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