International Journal of Advanced Community Medicine

E-ISSN: 2616-3594
P-ISSN: 2616-3586
IJACM 2019; 2(1): 20-22
Received: 09-01-2019
Accepted: 20-02-2019

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Knowledge, Attitude and Practice (KAP) of rural population towards diabetic complications in a developing country: An observational study

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DOI: https://doi.org/10.33545/comed.2019.v2.i1a.05

Abstract
Introduction Diabetes Mellitus is a major global non-communicable epidemic disease. Knowledge about diabetes, its risk factors and complications is poor. **Methods and materials:** This was a hospital based study in which adult diabetics with age of 18yrs or more, who attended the hospital on OPD basis for consultation of diabetes. A total of 275 patients from two peripheral hospitals of Kashmir. **Results and observation:** Regarding the complications dizziness was mentioned by majority as a sign of hypoglycemia (42.1%) followed by palpitations, sweating, rigors and coma in 20.4%, 17.4%, 16.1% and 10% respectively. The most frequent known chronic complication of diabetes mentioned was cardiovascular (37%), sepsis (35%), nephropathy (32.0%), retinopathy (28.1%) and skin infection/ xerosis in 17% of patients. **Conclusion:** Knowledge about diabetic complications was low in our study. Most of rural population have poor access to diabetic information.

Keywords: diabetes, complications, attitude

1. Introduction
Introduction; Diabetes Mellitus is a major global non-communicable epidemic disease. It contributes to more than 4.5 million deaths annually worldwide. India is having largest number of diabetic persons, and holds nearly 15% of global diabetic burden and it is going to have about 70 million by year 2025. 80% of diabetics are living in low and middle income countries [1]. Very few studies are there regarding the level of awareness about diabetes and its complications. Asian countries show poor knowledge about diabetes in rural areas [2-4]. The low level of awareness about diabetes contributes to a large extent in the development of complications of diabetes [5] knowledge about diabetes, its risk factors and complications was poor in multiple studies [6, 7]. Individuals may present with complications even coma and death [8, 9]. Knowledge of population about diabetes types, risk factors and its complications could contribute to early detection and change the modifiable risk factors. This study was conducted in outskirts of Kashmir to assess the level of knowledge about diabetic complications.

2. Methods and Materials
This was a hospital based study in which all adult diabetics with age of 18yrs or more, which included both newly diagnosed and old patients, who attended the hospital on OPD basis for consultation of diabetes. A total of 275 patients were part of study. Study was conducted in two peripheral hospitals of Kashmir which included district hospital Kulgam and emergency hospital Qazigund. All adult patients excluding psychiatric patients (who couldn't comprehend the questionnaire) and those having dementia were part of study. Formal consent was taken from all patients before they were included in study. The study was conducted from April 2017 to Dec 2018. Questionnaire was prepared and patients were made to understand it in the comprehensive language to them and they were assessed in detail about the knowledge of Diabetic complications the data was collected and analysed.

3. Results and observations

Our study was conducted in more than 18 months. General characteristics of the patients are in table 1. 154 (56%) of our patients were females and 121 (44%) were males. 173 (63%) patients were aged 40 years or more and 102 (37%) were below 40 years. 160 (58.2%) of our patients had family history of diabetes. Smoking was associated in 66 (24%) patients and hypertension was seen in 154 (56%) patients. Regarding the complications dizziness was mentioned by majority as a sign of hypoglycemia (42.1%) followed by palpitations, sweating, rigors and coma, 20.4%, 17.4%, 16.1% and 10.5% respectively [Table 2]. The most frequent known chronic complication of diabetes mentioned were; cardiovascular (37%), sepsis (35%), nephropathy (32.0%), retinopathy (28.1%) and skin infection/ xerosis in 17% of patients.

Table 1: Table showing general characteristics of the patients

Sex		Age		Smoking		Educational status				
Male	Female	<40yrs	>40yrs	Present	Absent	Illiterate	Up to 10th class	Graduate	Postgraduate	Professional
121 (44%)	154 (56%)	120 (37%)	173 (63%)	66 (24%)	109 (76%)	86 (31.3%)	109 (39.7%)	41 (15%)	29 (10.5%)	10 (3.5%)

Table 2: Knowledge about acute complications of diabetes

Complication	No of patients
Hypoglycemia	116 (42.1%)
Palpitations	56 (20.4%)
Sweating	48 (17.4%)
Rigors	44(16.1%)
Coma	29 (10.5%)

Table 3: Knowledge about chronic complications of Diabetes

Complication	No of patients
Cardiovascular	101 (37%)
Sepsis	96 (35%)
Nephropathy	88 (32.0%)
Retinopathy	77 (28.1%)
Skin infection/ Xerosis	47(17%)

4. Discussion

Knowledge about signs and symptoms of hypoglycemia was low in our study compared to similar study conducted by Gul *et al.* [10]. Percentage of patients mentioning retinopathy as one of the complications of diabetes was less in our study as compared to the studies carried out in Oman and Kuwait [11, 12]. These differences could be due to the demographic and socioeconomic composition of our rural population compared to high income countries. Some more studies also had low knowledge regarding the diabetes [13-16]. Most of rural population has poor access to diabetic information [17]. In complications, both acute and chronic, hypoglycemia was mentioned by majority followed by cardiovascular complications. This response was important as hypoglycemia was an important and dangerous complication of diabetes which added both to mortality and hampered the strict diabetic control [18]. Disturbing was that knowledge regarding to other chronic complications was even low.

5. Conclusion

The attitude and knowledge of our population regarding the diabetic complications is low in rural areas of our state. Diabetes being one of the major non communicable disease of our country. As the knowledge about chronic diseases among patients has impact on management of chronic disease and considering the morbidity and mortality due to diabetic complications we need to have extensive diabetes educational programmes at patient and community level.

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