

Knowledge, Attitude and Practice (KAP) Survey of Type 2 Diabetes Mellitus

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ABSTRACT

Background: A good knowledge of disease management is necessary in promoting care and enhancing good therapeutic outcomes. Diabetes mellitus is a major health problem in Pakistan with individual, social and economical consequences. Knowledge, attitude and practice surveys are effective in providing baseline for evaluating intervention programs.

Objective: To assess the knowledge, attitude and practice of diabetics and its co-morbidities in Pakistani population.

Patients and Methods: This descriptive, cross-sectional survey was comprised 250 patients and conducted in the Endocrine & Diabetes Clinic, Department of Medicine, Shaikh Zayed Hospital Lahore from 1st June 2013 to 31st December 2013. Patients aged 40-70, either sex were included. Patients who have type I diabetes mellitus were excluded. Participants underwent a knowledge, attitude and practice (KAP) questionnaire survey regarding assessing diabetes, socio-demographics, associated medical conditions & self care.

Results: There were 85 (34%) males and 165 (66%) were females. The mean age of the patients was 52.40±6.62 years and mean duration of diabetes was 12.22±3.81 years. Among the study subjects, the levels of knowledge were low in 46%, medium in 39% and high in 63%. The levels of attitude were also described accordingly as low 8%, medium 32% and high 60%. The levels of practice of study subjects were found to be low in 78%, medium in 15% and high in 7%.

Conclusion: Results revealed good attitude but poor knowledge and practices (behaviour) towards diabetes. We concluded that there is a need for structured community programs to improve attitude and practices of diabetic patients to promote better compliance towards diet, exercise and drug regimen to prevent from complications related to diabetes.

Key words: Knowledge, Attitude, Practice, Type 2 diabetes mellitus

INTRODUCTION

Diabetes is now emerging as an epidemic of the 21st Century. It threatens to overwhelm the health care system in the near future.¹ Diabetes mellitus is a disease of global epidemic proportions especially prevalent in countries undergoing socio-economic transformation. The prevalence of diabetes has been estimated by the World Health Organization² at 171 million; this number is forecasted to reach 300 million by 2030.³

Type 2 DM is the most common type of diabetes, seen in around 90-95% of the diabetic population.⁴ It is associated with morbidity and mortality which affects patients' general health and well-being and it is therefore regarded as a major public health problem⁵, in addition younger age groups, striking younger adults and the adolescents are also affected by type 2 Diabetes. Also the diabetes is one of the most common reasons for amputations and social stigma.⁶

Diabetic knowledge alone is not sufficient for diabetic patients to convince patients change their life style to protect their future. It has been suggested that attitude, as a psychological variable for diabetic patients, has an effect on the relationship between knowledge and life style change of practice.⁷ Moreover, for the improvement of glycemic control, diabetic patients also need to increase their knowledge about the disease, which would affect their attitude and this will in turn lead to decrease in morbidity, mortality and related to diabetes and increase in their in health related quality of life. Education through repeated counselling session on each visit and through media is likely to be effective if we know the characteristic of the patients in terms of knowledge, their attitude and practices about diabetes. There are numerous studies with special emphasis on epidemiology. Knowledge is the greatest weapon in the fight against diabetes mellitus. Information can help people assess their risk of diabetes, motivate them to seek proper treatment and care, and inspire them to change their attitude towards disease.⁸

This study therefore was conducted to assess the level of community awareness of diabetes and how this knowledge influences their attitude and

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practices in prevention and control of the disease and its related morbidities. The findings will help in identifying population, knowledge gap and their behaviour towards diabetes which will guide the development of prevention programs in the country.

PATIENTS AND METHODS

This descriptive, cross-sectional survey was comprised of 250 patients & conducted in the Endocrine & Diabetes Clinic, Department of Medicine, Shaikh Zayed Hospital, Lahore from 1st June 2013 to 31st December 2013. Patients aged 40-70 of either gender were included. Patients who have type 1 diabetes mellitus were excluded. Participants underwent a knowledge, attitude and practice questionnaire survey regarding assessing diabetes, socio-demographic and medical history. The first part of the questionnaire covered the respondent's demographic information which included: Name, age, sex, level of education, occupation & average monthly income, history of diabetes in relatives or friends and associated comorbidities like hypertension, ischemic heart disease, cardiovascular disease or neuropathy. Knowledge of complications of diabetes was assessed by asking respondents to describe complications of the disease they knew. Respondents' knowledge of diabetes was categorized as either good, medium or poor depending on their responses to the knowledge areas assessed. All filled questionnaires were then submitted to the survey supervisors who checked their completeness before the interviewer left that area. Where information was missing the interviewer revisited the respondent for further information unless they had initially declined to disclose. Upon processing of all the field data, analysis was done under the domain of descriptive statistics using SPSS

RESULTS

The demographic characteristics of the participants are presented in Table 1. Among 250 diabetic patients, the mean age was 52.40±6.62 years; 85 (34%) were males and 165 (66%) were females. The mean duration of diabetes was 12.22±3.81.years. About 38% (n = 95) were employed by the government. The association of chronic conditions i.e. hypertension in 157 patients (52.8%), dyslipidemia in 112 (44.8%) and ischemic heart disease in 92 patients (36.8%) were recorded. The proportion of correct answers in the sections of Knowledge, Attitude and Practice, obtained from the survey are shown in Table 2. Among the study subjects, the levels of knowledge were low in 46%, medium in 39% and high in 63%. The levels of

attitude were also described accordingly as low 8%, medium 32% and high 60%. The levels of practice of study subjects were found to be low in 78%, medium in 15% and high in 7% (Fig. 1).

Table 1: Demographic characteristics of respondents (n=250)

Variable	No.	%
Gender		
Male	85	34.0
Female	165	66.0
Age (years)		
40 – 50	80	32.0
51 – 60	150	60.0
61 – 70	20	8.0
Occupation		
Civil servant	95	38.0
Self employed/Business	18	7.2
Retired	20	8.0
Unemployed	24	9.6
House wife	93	37.2
Monthly Income (rupees)		
<30000	150	60.0
30000 – 70000	55	22.0
Unsalariated	45	18.0
Duration of diabetes (years)		
< 10	50	20.0
> 10	200	80.0
Family members, relatives or friends with diabetes	125	50.0
Current smokers	100	40.0
Associated chronic conditions		
Hypertension	157	52.8
Dyslipidemia	112	44.8
Ischemic heart disease	92	36.8

DISCUSSION

It is of utmost important to perceive that the management of diabetes mellitus not only requires the prescription of appropriate nutritional and pharmacological regimen by the physician but also education and counseling of the patient by the health care providers.⁹⁻¹¹ Like any other chronic illness, the diabetic patients will change their attitude towards diabetes only if they are counselled repeatedly from time to time about the importance of exercise, dietary restrictions along with religious use of medications and also disastrous complications of diabetes to the extent that they are convinced and perceive themselves to be at high risk if they are not compliant with the advice. Pierce et al drew these conclusions in the study of offspring's view about diabetes.¹² The study carried out by Wyshak¹³ at an interval of 15 years among collegiate students found that they believed modified behavioural practices such as physical activity and weight control would reduce risk of diabetes and related complications.

Table 2: Variables of KAP scoring questionnaire

Items/Questionnaire indicating knowledge, attitude and practice	Correctness of answer	
	n	%age
What is the ideal level of BSL		
Fasting & pre-meals	50	20.0
2 hours post meals	88	35.2
How often do you monitor BSL (average)	63	25.2
How do you monitor BSL at home	88	35.2
Foot Care		
A person with diabetes should take extra care of his/her feet especially when cutting his/her toenails	150	60.0
Tight elastic hose or socks are not bad for a person with diabetes	75	30.0
Type of habitually used footwear		
Closed and tight/open sandals/closed soft	34	13.6
Nail cut		
Rounded/straight	88	35.2
Scissors/Nail cutters	100	40.0
A person with diabetes should report any change in his eyesight to his doctor	120	48.0
A person with diabetes should take care, brush and floss his/her teeth every day	63	25.2
Cigarette smoking can worsen diabetes disease	145	58.0
There may be future need of insulin as treatment modality	50	20
Consequences of uncontrolled diabetes or hypoglycaemia		
Shaking, confusion, behavioural changes and swelling are signs of low blood sugar	108	43.2
Low blood sugar level can be very fatal to cause heart attack	45	18.0
Prolonged high blood sugar level can cause problem/even blindness/ retinopathy	90	36.0
Peripheral artery diseases and limb loss	188	75.2
Prolonged uncontrolled blood sugar level can cause heart attack, stroke and kidney problems	150	60.0

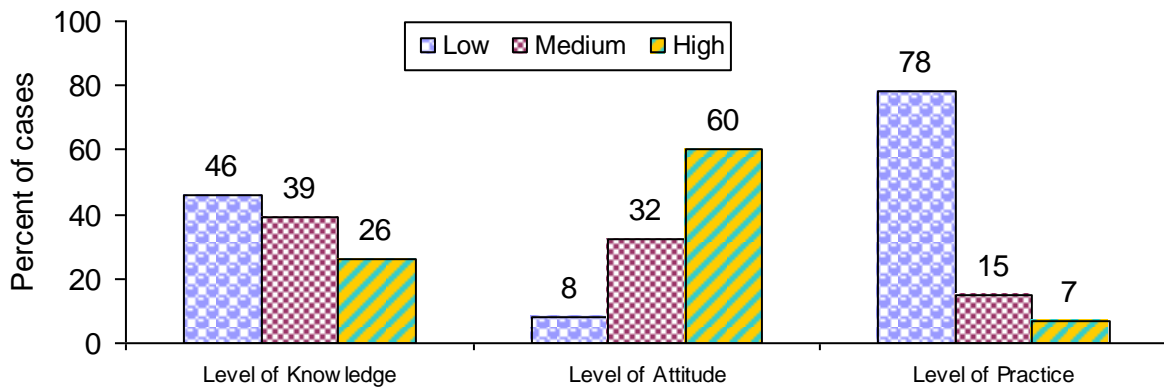


Fig.1: Level of knowledge, attitude and practice of the study subjects

The gender-wise distribution of the study participants showed that, most of the study participants were females (66%) in contrast to male gender (34%). This gender based proportion coincides to those referred in international literature. Gender and age specific prevalence and associated risk factors of type 2 diabetes mellitus in Uyo metropolis, Nigeria 10 conducted in 2010 had 60% females and 40% males, but studies in India showed higher prevalence among males than in females.^{14,15} It was also noted that only 20% of the participants had had diabetes diagnosed in less than 10 years

time and rest were having it for more than 10 years, but the overall KAP survey response was not adequate in both these groups and the majority of the studied patients had low levels of correct knowledge and practice regarding various questionnaire variables and points of consideration about diabetes irrespective of duration of diabetes highlighting the lack of counselling or the gap between knowledge and attitude . This probably suggests that it is not the literacy or the duration with diabetes of the patients, but in fact the ignorance of the patients that is responsible for lack of self-care practices.

This finding is consistent with many other studies; Mohan et al¹⁶ and Murugesan et al⁹ who conducted their studies in Chennai and parts of south India respectively. They concluded that only 38.52% of patients had correct knowledge about symptoms of diabetes. Roaeid and Kablan¹⁷ also found in this study that only 20-35% of the participants had the correct knowledge of how much pre and post dinner sugar levels should be, how frequently and when it should be checked and what should be the ideal mode of checking blood sugar level.

Distribution of the study participants based on their duration of diagnosis with diabetes in the present study shows that 30.9% of the participants were living for 5 to 10 years with diabetes. The mean duration of diabetes was 10.2±6.8 years. Similar studies done carried out in 2011 in England and India showed the analyses of adjusted HbA1c levels revealed that longer diabetes duration and female gender were indicative of poorer self-care.^{18,19}

This result is concordant with the international literature. Upadhyay et al in 2008²⁰ and Perez & Cha in 2007²¹ found nearly similar results among Nepalian patients (37.91%) and among patients (38%). In our study, the participants (60%) knew the importance of foot care in the diabetes but only 13.5% were right in the decision of selection of shape/whereabouts of foot ware and only 1/3rd knew how to cut their toe nail (30%) & what instrument is to be used (40%). Only 25% participants had the proper knowledge about mouth and tooth care. The results are discordant with a latest international study done in the municipality of Picos, Piauí, Brazil. Results showed that 49.4% did not know how to perform foot hygiene or what they should observe in their feet, 56.5% did not know the correct way to cut their toe nails (Knowledge, attitudes and practices for the prevention of diabetic foot.²²

In contrast to 30 pt-KAP survey conducted in Nigeria that described that knowledge about co-existence smoking as aggravating factor in diabetes, the correct response ratio was >90% but in our study about half of the participants were confidently knowing that smoking if co-existent with diabetes can worsen all the complications of diabetes.²³ Similar findings were reported by Kamel et al²⁴ in Ismailia, Egypt and Hussein et al²⁵ among diabetics attending outpatient clinic in Cairo, Egypt. Of all the aspects, the behavior scores were the worst among the study participants

The importance of mouth and tooth care in diabetes was known only in quarter of the participants of our study in concordant mentioned in the international literature. The comparative study published in 2013 done by Ismaeil and Ali²⁶ in Saudi Arabia. Less than 25% of participants were aware of

signs of gingival diseases and more than 50% of the participants did not have adequate oral health knowledge related to diabetes. Both of these studies point towards either lack of oral health counseling on the part of physicians, and /or illiteracy of the public due to lack of community health services.

In the current study, complications of prolonged hyper or hypoglycemia, assessed. They included especially hypoglycemia, symptoms and complications, diabetic foot, eye and kidney or brain disease. Although hypoglycemia is a serious problem with significant morbidity and mortality, yet only 43% of the studied patients were aware of the symptoms and signs of hypoglycemia, only 18% knew about the dire consequences (heart attack) of hypoglycemia esp. if low blood sugar persists longer, 36% participants were aware of retinopathy & blindness as a result of poorly controlled diabetes. Sixty percent of population knew about renal failure and paralysis cumulatively. These findings are comparable with those already studied by Roaeid & Kablan¹⁷ and Omani Diabetic pilgrims studied in Makkah during Hajj in 1998.²⁷

The knowledge about diabetes complications in our study participants is unluckily lower & comparable with poor attitude and poor practice than that reported earlier in many studies; Rafique et al²⁸ conducted a study at Agha Khan university karachi in 2006 in 199 patients who had diabetes diagnosed in less than 10 years time. Good score (>60%) was present in only 13.6% of participants for knowledge, 17.6% for attitude & 11.2% for practices. Roaeid et al¹⁷ at Benghazi Diabetes Centre, Libya conducted a big study on 805 pts in 2007. Only 2.4% of diabetics used a glucometer and 8.0% of all diabetics used urine sticks. Many patients were not compliant with treatment and were ignorant about hypoglycaemia symptoms or the complications of diabetes.

CONCLUSION

Health interventions and education programs must be appropriately planned and implemented at a national level to manage risk factors for diabetes, such as sedentary life style, dietary modification and conducting regular screening programs to identify people with diabetes and pre-diabetes. This is imperative to improve the general level of knowledge on the self-management of diabetes especially foot care through repeated counselling and through media to prevent the development of diabetic complications. The findings of the research suggest that community health interventions related to diabetes and its complications as well as risk factors should target certain groups of the population particularly women and those with lower education and incomes to

ensure benefits from individual, societal and health-economic perspectives.

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