International Journal of Community Medicine and Public Health
Dahake ST et al. Int J Community Med Public Health. 2019 Dec;6(12):5262-5267
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20195482

Original Research Article

A cross sectional study to assess knowledge attitude and practices of type 2 diabetes mellitus in urban and rural population of Maharashtra

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Received: 10 October 2019
Revised: 15 November 2019
Accepted: 16 November 2019

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ABSTRACT

Background: Prevalence of type 2 diabetes is increasing globally, more so in developing countries like India due to rapid urbanization. As India ranks first in diabetes prevalence and will continue to do so in 2025, we must prevent the disease by various measures. Therefore, prevention is important aspects. The aim of the study was to assess the knowledge, attitude and practices of patients having type 2 diabetes mellitus.
Methods: A cross sectional study was done in the urban and rural health centre among 100 diabetes patients in each. Data were collected regarding their knowledge, attitude and practices about diabetes and associated risk factors. Data was analyzed by SPSS 20 version.
Results: Mean age of the study respondents were 50.45 and 52.50 years in urban and rural health centers respectively. We found that most patients are having good knowledge about diabetes mellitus in urban health centre while rural population had low knowledge. Both groups had most subjects with low level of education and low income groups. Very low percent of people know about the complications of diabetes mellitus in both the groups.
Conclusions: This study showed that there was good knowledge, attitude and practice in urban and very poor knowledge, attitude and practices in rural about the diabetes which needs to be increased. Life style modification is needed for reducing the complications of diabetes mellitus.

Keywords: Diabetes mellitus, Knowledge, Attitude, Practices

INTRODUCTION

Type 2 diabetes mellitus results from the body's ineffective use of insulin while gestational diabetes is hyperglycemia with onset or first recognition during pregnancy.[1,2] Participation of patients is very crucial in the management of diabetes mellitus as medications alone aren't enough to manage the disease without different non pharmacological measures taken.[3,4] Prevalence of diabetes mellitus is increasing globally, more so in developing countries like India due to rapid urbanization.[5-7] In adults the prevalence of diabetes globally has risen from 4.7% in 1980 to 8.5% in 2014.[8] Unhealthy lifestyle, rapid westernization, poor knowledge, negative attitude, poor practices towards diabetes mellitus are the reason an increase in the prevalence of diabetes mellitus in developing countries. There is a large gap between the knowledge, attitude, and practices towards diabetes among patients with diabetes in urban slums. Although patient education is an integral component of diabetes care, there remain uncertainties regarding the effectiveness of different methods and modes of education.[9-12]

A systematic review concluded that patients with diabetes might perceive better self-efficacy in disease management with self-monitoring of blood glucose and would have a better understanding about the possible factors that affect diabetes management Improving knowledge level of the patients regarding the diabetic drugs can be done by many

ways including group education as well as through patient counselling.[13] Very few studies have been performed on these issues particularly in developing country like India. The aim of the study was to assess the knowledge, attitude and practices of patients having type II diabetes mellitus in the urban slum and rural population.

METHODS

Study design and place

A cross-sectional study of knowledge, attitude and practice of type 2 diabetic patients was conducted in urban slum health center and rural health center under the field practice area of K.E.M hospital.

Study period

The study was conducted for period of 3 months (January 2016 to April 2016).

Selection criteria of the patients

All patients attending outpatient department of health centers including newly diagnosed and follow up or referred type 2 diabetes mellitus were selected by convenient sampling till we reached sample size of 100 in each health center. The exclusion criteria disallowed patients who were not physically or psychologically able to conduct the interview.

Study procedure

Data was collected through a structured interview with patients attending the outpatient department of the health centers. In the present study total 200 patients who fulfilled the inclusion criteria and were willing to participate in the study were interviewed.

Pretested and pre-validated, semi-structured questionnaire regarding knowledge attitude and practice among diabetic questionnaire containing 25 knowledge, 10 attitudes, 10 practice questions. Score 1 was given for correct answer, 0 for the wrong answer after getting informed written consent questionnaire was given to the participant.

Patients who had other medical complications and who were unable to answer short list of simple questions were excluded from the study. The knowledge, attitude and practice of the subjects were assessed by an interviewer-administered questionnaire which was constructed in local language and again translated back. Ethical approval was obtained from the institutional ethical and research review committee. Informed written consent was taken from all respondents after full explanation of the nature, purpose and all procedures used for the study. Confidentiality of participants was maintained at all times.

All responses were tabulated by the investigator using Microsoft-Excel 2007 Software. Data was analyzed by using SPSS Software version 17.0.

Ethical approval

Ethical clearance was obtained from the institutional review board of the college after submitting the protocol and subsequently answering all their queries.

RESULTS

Table 1 shows the characteristics of the respondents. Mean age of the study respondents were 50.45 and 52.50 years in urban and rural health centre respectively and among them most of the subjects belongs to age group 40 years to 60 years. The 42% of the patients in urban and 52% in rural were male while 58% of the patients in urban and 48% in rural were female. The 43% in urban and 40% in rural population were unskilled worker as in laborer, maids while most of the female respondents were house wife in both the groups. Maximum diabetics had per capita income below 3000 rupees in both the groups (Table 1).

Table 1: Distribution of socio-demographic variables of respondent.

Socio-demographic variables		No. of respondents in urban centre	No. of respondents in rural centre
Age group (in years)	41-50	29	25
	51-60	44	47
	61-70	27	28
Sex	Male	42	52
	Female	58	48
Education	Illiterate	15	22
	Primary	38	40
	Secondary	35	32
	Above secondary	12	8
Occupation	Housewife/retired/not working	45	52
	Unskilled worker	43	40
	Skilled worker	12	8

Continued.

Socio-demographic variables		No. of respondents in urban centre	No. of respondents in rural centre
Per capita income (in Rs.)	<1500	28	35
	1500-3000	46	42
	3001-6000	21	31
	>6000	5	2

Table 2: Knowledge regarding diabetes mellitus among diabetic patients.

Knowledge of diabetes mellitus		No. of respondents in urban centre	No. of respondents in rural centre
What is diabetes	Higher level of sugar in the blood?	64	42
	Low level of sugar in blood	15	18
	Don't know	21	40
Symptoms of diabetes	Polyuria	45	20
	Polyuria+polyphagia	30	12
	Polyuria+polyphagia+polydipsia	15	2
	Polyuria+polyphagia+polydipsia+ weakness	10	1
Required lifestyle modification	Stop taking sugar products	88	40
	Stop taking fatty oil food ortaking sugar products	65	32
	Regular exercise	35	25
	Stop taking alcohol or tobacco or oil products	23	15
	All of the above	10	8
Complications of diabetes	Eye problem	26	7
	Heart problem	17	9
	Renal problem	14	3
	Don't know	43	78

Table 3: Attitude regarding diabetes mellitus among diabetic patients.

Attitude regarding diabetes mellitus		No. of respondents in urban centre	No. of respondents in rural centre
Keeping normal blood sugar help to prevent complication	Yes	52	35
	No	18	22
	Don't know	30	43
Diabetes is a serious disease	Yes	28	25
	No	12	15
	Don't know	60	60
Regular exercise keep diabetes control	Yes	45	38
	No	15	8
	Don't know	40	54
Regular medication keep diabetes control	Yes	25	15
	No	40	12
	Don't know	35	73

Table 2 shows the knowledge regarding diabetes mellitus among diabetic patients in which 64% in urban and 42% in rural respondents had knowledge about higher level of blood sugar. Most of the respondents were aware about the symptoms of diabetes in urban while very few were aware of diabetes symptoms in rural population. 88% respondents in urban and only 40% in rural were concerned towards stop taking sugar products. Almost 10% respondents had knowledge about stop taking alcohol or tobacco or sugar products or taking oil foods. Only 57% in urban and only 22% in rural were known to some or other consequences and complications of diabetes. The population in both the groups has poor knowledge regarding the complications of diabetes. Only 17% of the population in urban and 9% in rural knew that diabetes can affect proper functioning of heart (Table 2).

Table 4: Practices regarding diabetes mellitus among diabetic patients.

Practices regarding diabetes mellitus		No. of respondents in urban centre	No. of respondents in rural centre
Do you get your blood sugar check	Yes	62	52
	No	38	48
Do you exercise regularly	Yes	35	32
	No	65	68
Do you take medicine regularly	Yes	65	60
	No	35	40

Table 3 depicts the attitude regarding diabetes mellitus among diabetic patients. Only 52% respondents in urban and 35% in rural were conscious for keeping normal blood sugar help to prevent complication. Rest of the respondents showed negative approach towards it. Maximum respondents in both the groups did not know about seriousness of diabetes. Exercise practice was assessed by enquiring about the nature of exercise done. Merely 35% in urban area and 32% in rural area had habit of regular exercise keep diabetes control (Table 3 and 4).

DISCUSSION

In the present study, mean age of the study respondents were 50.45 and 52.50 years in urban and rural centers respectively and among them most of the subjects belongs to age group 40 years to 60 years. The 42% of the patients were male and 58% of the patients were female in urban centre while in rural 52% were male and 48% were females. Another similar study enrolled 200 patients with diabetes during the study period. 54% of the patients belong to the age group of 46 to 55 years. Saleh et al reported mean age of the study respondents was 45.17±5.68 years and among them 45% were male.[14] In addition, another study included 64% male patients and 36% of the patients were female. The mean age was 50 years and the mean duration of the disease is 9.7 years.[15] In present study about in urban area 10% were illiterate and 6% had graduation and above whereas similar study stated that 22% of the population was illiterate and 36% had graduation and higher education.[15] The management of diabetes not only requires the prescription of the appropriate nutritional and pharmacological regimen by the physician but also intensive education and counselling of the patient.[16] This finding highlights that the average knowledge levels are low despite of 78% literacy rate in communities with higher diabetes prevalence.[17] As patients are the most important decision makers, they should receive enough instruction to make informed decisions about prevention and management.[18] Education can be more effective when it is educated according to knowledge, attitude and practice of patients.[14] In present study respondents in both rural and urban centers had inadequate knowledge regarding the complications of diabetes. 43% in urban and 78% in rural didn't know any kind of complications regarding the diabetes. Only 17% of the population in urban and 9% in rural knows that diabetes can affect proper functioning of heart. Almost similar findings were reported by Thapliyal et al.[15]

64% respondents in urban and 42% in rural had knowledge about higher level of blood sugar. Most of the respondents were aware about the symptoms of diabetes in urban area. A study reported that the overall assessment regarding the knowledge of diabetes was satisfactory 50% of the population knows what diabetes is and what causes diabetes? But the population had poor knowledge regarding the features of diabetes.[15] Previous studies both in developed and developing countries have reported that knowledge about diabetes is generally poor among diabetic patients.[16,19-22] Similar to present findings, one study that surveyed patients attending tertiary education hospitals in Gujarat-the Saurashtra region of India found that 51% of patients believed exercise assisted with diabetes control, 75% knew that diet was important in diabetes control and only 7% reported quitting smoking was related to diabetes management.[16] Another study of 575 patients with diabetes in the United Arab Emirates attending outpatient clinics reported that 60% of people believed that diabetes was caused by excessive sugar and sweets.[19] This concurs with present findings that 80% of participants believed diabetes could be controlled by reducing sweet and sugar. In present study 72% in urban and 75% in rural respondents hadn't showed proper attitude toward seriousness of diabetes. Merely 35% in urban and 32% in rural had routine of regular exercise for keeping diabetes control. Moreover, 85% of the diabetic patients undertook physical exercise.[23] Compared to Sangra et al it was 66.48% and in Upadhyay et al it was 66.48%.[8,13] In present study 62% in urban and 52% in rural had positive response for the question 'do you get your blood sugar check' In contrast, a study reported that 31% respondents checked blood glucose levels once a year, 16% checked it at least twice in a year.[24] In present study association of knowledge with higher education and higher class of socioeconomic status showed significant result. Knowledge scores had a strong association both with attitude as well as practice scores. The knowledge and attitude score in the current study is in concord with those stated by Ng et al and Ambigapathy et al.[25,26] However, Islam et al showed in Rasch analysis that the overall participants have a significantly below average knowledge score. Most of the previous studies including the study conducted in Bangladesh examined those who were already diagnosed

with diabetes and attending hospitals or centers for diabetes care, and thus the responses may be biased compared with present findings from the general population.[24] Both knowledge score and attitudes towards treatments for diabetes in present study population are very similar to those reported by Al-Maskari et al.[4] Complementing this was randomized control trial evidence from Australia which showed that knowledge of the risk factors of diabetes and motivation to life style change were powerful predictors of change in diet and exercise.[28,29]

CONCLUSION

This study showed that there was good knowledge, attitude and practice in urban while poor knowledge, attitude and practices in rural population about the diabetes which calls for immediate action and education by skilled health care providers in rural populations. The development of public health program to increase knowledge of diabetes and its complications is required to assist people living in rural India to control and management of diabetes. From the result of this study we can conclude that education plays an important role. Life style modification is needed for reducing the complications of diabetes mellitus.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Dahake ST, Shaikh UA. A cross sectional study to assess knowledge attitude and practices of type 2 diabetes mellitus in urban and rural population of Maharashtra. Int J Community Med Public Health 2019;6:5262-7.