



Assessment of Knowledge, Attitude and Awareness of Diabetes Mellitus in adults of a slum area of Mumbai, India: A Cross-Sectional Study

KEYWORDS

Diabetes, India, Mumbai, Awareness, Knowledge, Attitude, Risk factors.

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ABSTRACT

Background: Diabetes Mellitus is one of the diseases which can be considered as a slow poison. The World will have more than 300 million diabetics by 2025. India alone accounts for more than 50 million patients which is the highest in the world. Very limited studies have been conducted before, which assessed the awareness of diabetes mellitus in slum dwellers especially in Mumbai. The aim and objective of the study was to assess the knowledge, attitude and awareness in slum dwellers of Mumbai, India. Methods: A cross-sectional study was conducted at a slum area of Mumbai, Maharashtra, India. A well-structured questionnaire was distributed to 150 adults between 18 to 60 years. Data was collected and statistics were drawn with the help of SPSS 19. Results: In the present study, out of 150, 54.44 % were males (84) and 44 % were females (66). We observed that 71.33% of the slum dwellers have heard about diabetes. 35.33% consumes tobacco while 27.33% have alcohol every day. 20.66% are hypertensive and almost one fourth of them denied taking any medications. Approximately 60% knew the cause of diabetes. 72.33% did not know any signs & symptoms of diabetes. 35% and 40% did not have any knowledge regarding the methods used for investigations and complications of diabetes respectively. Conclusion: Overall, the present study showed that the awareness, attitude and knowledge was low in slum dwellers of Mumbai, India. In order to further prevent new cases and complications of diabetes, new schemes and policies of health awareness should be implemented at grass root level.

Introduction

Diabetes is a chronic condition which may be caused either by inherited and /or acquired deficiency in production of insulin or its effect on the cells or tissues of the body. The prevalence of diabetes mellitus has increased substantially in the last two decades.

The World Health Organization (WHO) predicts that countries like India will bear the burden in 21st century. Today, India has about 35 million diabetic patients and it is projected that it will further increase to 79.4 million by the year of 2030. ¹ WHO has also declared India as the "Diabetic Capital". ²

India is still a developing country with many diverse patterns. 70% of India's population, yet live in rural areas. Most of these regions are underdeveloped and people do not have proper knowledge or awareness regarding diabetes symptoms, complication and its prevention.³ Furthermore, lack of infrastructure and high-risk groups screening are responsible for the failure of early diagnosis. This implies that most Indians develop diabetes in early adult life, in the most productive years of their lives and may live up to an older age, developing and suffering from chronic morbidities and thus living a poor quality of life.⁴

Recent surveys estimated that around 6-12% of urban and 2-3% of rural Indians have diabetes.^{5,6} Diabetes has thus become a significant economic burden for developing countries like India, since it drains almost 5-25% of total family income of an Indian.⁷

Out of 2 types, Type 2 diabetes mellitus is more prevalent in Indian population.⁸

Patient's knowledge of self-care is the key to achieve high therapeutic goals in ambulatory medicine.⁹ Very limited studies have been conducted before which assessed the awareness of diabetes mellitus in slum dwellers especially in Mumbai. Hence, the current study was conducted in or-

der to access the level of knowledge, attitude and awareness regarding various aspects of diabetes mellitus and the factors affecting this level of awareness.

Methods and Materials

The present study followed the "stepwise" approach as recommended by WHO for surveillance of common risk factors, which uses standardized protocols for collecting, analysing and monitoring trends for risk factors.¹⁰

Step 1: Collection of general information on factors like socio-demographic variables, and behavioural risk factors which include tobacco and alcohol use, physical inactivity, diet and related factors using a questionnaire.

Step 2: obtaining clinical measurements such as height, weight, and blood pressure using standardized protocols and instruments.

Step 3: biochemical measurements such as serum total cholesterol, high density lipoprotein (HDL) cholesterol, blood glucose, and triglycerides using fasting blood samples. However, due to lack of instruments, It was not carried out in this study.

A cross-sectional, quantitative, observational, pre-test-ed^{11,12}, well-structured questionnaire-based survey was conducted at one of the most populated slum area of Mumbai, India between July-October, 2015.

Data was collected through the questionnaire from 150 adults after telling them the importance of the study and taking informed consent. The questionnaire was explained in their own language which was Marathi and Hindi, if they did not understand English.

Statistics were drawn with the help of Excel and SPSS 19. Data was expressed in actual number, mean \pm standard deviation, and percentage.

Inclusion Criteria

- All adults from 18 years of age up to 60 years who were present during the time of survey
- Who willingly participated

Exclusion Criteria

- Adults who did not gave their consent or Incompletely filled questionnaire
- Adults who were absent during the survey
- Below 18 and above 60 years of age

Definitions used

Any form of tobacco use or alcohol use was considered as a risk factor. Overweight was defined as body mass index (BMI) of more than or equal to 25 kg/m² and obesity as ≥30 kg/m².¹³ Hypertension was defined as a systolic blood pressure of ≥140 mm of Hg or a diastolic blood pressure of ≥90 mm of Hg or the use of blood pressure lowering medications for hypertension.¹⁴ Physical activity was classified into three groups: (1) inactive when the individual was inactive at work, transport, and leisure time; (2) vigorous when the individual had vigorous activity at work, transport, or leisure time; and (3) all other individuals were classified as having moderate activity.

Results

A total of 150 completely filled questionnaires out of 166 distributed were analyzed. The overall response rate of survey was 90.36%.

Demography: Out of 150 adults surveyed, 54.44 % were males (84/150) and 44 % were females (66/150). The mean age of the adults was 34.82 with SD 9.39.

Behaviour & other risk factors: 35.33% of the adults currently used some form of tobacco and 41% of them consumed alcohol. 59.33% of adults said that they work moderately. 86% had their Blood Pressure (B.P.) checked by a doctor or health care worker in the past. 20.66% of the adults had been told that their B.P. has been raised and out of them about 74.19% of the adults used to take anti-hypertensive drugs regularly. 24.66% of adults accepted that their nearest family members (parents, grandparents or siblings) had diabetes. (Table 1)

Table 1 Behaviour & other risk factors

| | | n | Percentage |
|---|--|----------|------------|
| Tobacco Use (All Forms) | Users | 53 | 35.33 |
| | Non-Users | 97 | 64.67 |
| Alcohol Use | Users | 41 | 27.33 |
| | Non-Users | 109 | 73.67 |
| Physical Activity | Vigorous Intensity | 22 | 14.67 |
| | Moderate Intensity | 89 | 59.33 |
| | Neither of these | 39 | 26 |
| Hypertension | B.P. ever checked by a doctor | Yes: 129 | 86 |
| | | No: 21 | 14 |
| | Was B.P. ever raised during check up by a doctor | Yes: 31 | 20.66 |
| | | No: 119 | 79.34 |
| Are you on B.P. Medication(Only applicable to those whose B.P. was high.) | Yes: 23 | 74.19 | |
| | No: 8 | 25.81 | |
| Family history of diabetes | Yes | 37 | 24.66 |
| | No | 113 | 75.34 |

Anthropometry: A majority [77 (51.33%)] had a normal BMI, and 27 (18%) were obese and 46 (30.66%) were underweight.

Knowledge and Awareness regarding diabetes: It is interesting to see that 71.33% were knowing about diabetes. When asked for cause of diabetes, 15.33% adults said it is due to family history, while 45.33% answered obesity and 39.33% denied knowing any cause. Only 27.33% knew about the symptoms and signs of diabetes. 35.33% of the slum dwellers did not know about the modes of investigation while 26% said that the investigation is based on blood and urine both. Very few knew about the complications of the diabetes, but 37.33% said that diabetes may lead to kidney problems. Regarding treatment route, almost 42% said that oral medicines are given. The best source of information was relatives followed by others. The data is depicted in table 2.

Table 2. Knowledge & Awareness regarding diabetes

| Category | n | Percentage |
|------------------------------|----------------------------|------------|
| Ever heard of diabetes | Yes: 107 | 71.33 |
| | No: 43 | 28.67 |
| Cause of diabetes | Family History: 23 | 15.33 |
| | Obesity: 68 | 45.33 |
| | Don't Know: 59 | 39.33 |
| Signs & Symptoms of diabetes | Correct: 41 | 27.33 |
| | Incorrect/Don't know: 109 | 72.66 |
| Diagnostic mode/method | Blood test: 37 | 24.66 |
| | Urine test:21 | 14 |
| | Both Urine & Blood test:39 | 26 |
| | Don't Know: 53 | 35.33 |
| Diabetes complications | Eyes: 23 | 15.33 |
| | Kidneys: 56 | 37.33 |
| | Brain: 11 | 7.33 |
| Modes of treatment | Don't know: 60 | 40 |
| | Injections: 43 | 28.66 |
| | Oral Medicines: 64 | 42.66 |
| Source of information | Don't know: 43 | 28.66 |
| | T.V.: 15 | 10 |
| | Friends: 29 | 19.33 |
| | Relatives: 36 | 24 |
| | Doctors: 28 | 18.66 |
| | Don't Know: 42 | 28 |

Discussion

The awareness regarding diabetes in the slum dwellers is very evident with 71.33% of them being aware of the disease condition when compared to a study conducted by Mohan et al which showed that 75.5% of the participants from Chennai at least knew about diabetes.¹ The present study shows better results than the study conducted by Muninarayana et al which reported 50.8% of the participants knew about diabetes.¹⁵

The present study revealed that most participants had a very healthy and active lifestyle, which explains low prevalence of obesity when compared to a similar study conducted in Tripura.¹⁶ It is very important for everyone to maintain an active lifestyle since it is the best method to prevent diabetes.

Majority of the participants in this study had an opinion that obesity and family history of diabetes might lead to diabetes. The study conducted by Muninarayana et al showed that 45% knew about the cause of diabetes which supports the present study as well.¹⁵ Hence the knowledge was too low and thus it makes extremely difficult for the slum dwellers to understand the importance of physical exercise and other life modifications.⁵

35.33% has tobacco everyday while 27.33% have alcohol everyday. These are the risk factors of getting diabetes in future. hence it becomes extremely important to stop these habits.

In our study, only 27.33% knew about the symptoms and signs of diabetes. Hence it becomes extremely difficult for the patients to realise that they are suffering from diabetes and hence they would not visit the doctor.

35.33% of the slum dwellers did not know about the modes of investigation. 26% said that the investigation is based on blood and urine both followed by blood only (24.66%) and urine (14%).

The current study showed that 40% did not know the complications of the disease. 37.33% said that diabetes may

lead to kidney problems followed by eyes (15.33%) and brain (7.33%).

Regarding treatment route, almost 42% said that oral medicines are given. The best source of information was relatives followed by friends (19.33%) and doctors (18.66%).

Conclusion: Overall, the present study showed that awareness and knowledge was low in slum dwellers of Mumbai, India. In order to further prevent new cases and complications of diabetes, new schemes of health awareness should be implemented.

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