

Original article:

Awareness and Prevalence of Diabetes Mellitus Among Housewives in Baneshwar of Nepal

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ABSTRACT

Background: Diabetes mellitus (DM) attributes to the highest risk to deaths from cardiovascular disease and epidemiological data provide convincing evidence that the risk of cardiovascular disease related to DM is accelerating day by day. It has become epidemic in Nepal. Aims and Objective: To find the prevalence and awareness regarding DM including the risk factors, symptoms, complications, management among the housewives of Baneshwar, Nepal. Materials and Methods: It was a cross-sectional community based study conducted in the Baneshwar of Kathmandu district. A structured questionnaire was used and 900 housewives of age 40 or more than 40 were assessed on their knowledge regarding the awareness of DM. Blood samples were taken of all the participants. Result: Out of 900 housewives, 24% (216) had a history of DM and 7 % (63) new cases of DM were discovered in this study. There was significant difference observed in knowledge of DM among the diabetes patients with respect to kidney failure ($p < 0.014$), symptoms like increased nighttime urination ($p < 0.042$) and Blurring of vision ($p < 0.008$). Conclusion: The study subjects even though were from cities had low awareness regarding diabetes and associated risk factors. Proper awareness campaign on DM should be carried out in cities as well as in rural areas of Nepal which will definitely help in accelerating public knowledge in prevention of the disease and its complications.

Keywords: Diabetes Mellitus (DM), Awareness, Knowledge

INTRODUCTION

Diabetes is a chronic disease caused by deficiency of insulin production by the pancreas. The worldwide prevalence of diabetes is 4% (1995) which will be 5.4% in 2025[1]. The prevalence of diabetes is increasing world-wide due to change in life style patterns and increasing number of old population. Diabetes was once thought to be a problem only of developed countries and among rich people. Now it is obvious that diabetes attributes a major disease burden in both developed and developing countries. In Nepal, DM is bringing new challenges in relation with rapid urbanization and modernization. As the population grows old, it is expected that prevalence of chronic diseases such as diabetes and hypertension increases

exponentially [2, 3]. DM is one of the five leading causes of death globally [4]. Furthermore; individuals with diabetes are at higher risk of heart disease, stroke, hypertension, blindness, renal disease, neural disease and complications of pregnancy [5].

Awareness and knowledge about DM, its risk factors, complications and management are important aspects for better control and better quality of life [6]. Many victims become aware that they have diabetes, only when they develop its life-threatening complications. Healthcare professionals as well as public policy makers are well aware of the public health impact of diabetes. Much effort has been devoted to educate the public about diabetes through various forms of media [7]. Still

in Baneshwar, it is not known how much the housewives actually know about diabetes, its associated risk factors and complications. This study aimed to assess the level of awareness of DM among diabetic and non-diabetic housewives in Baneshwar region, Nepal. Based on the results of the study, the authorities will be able to decide about the need to increase the level of awareness among the most vulnerable group for the diabetes i.e. the housewives. Prevention is better than cure; awareness is always helpful to reduce the prevalence of earlier onset of DM and its complications. This study will be definitely very helpful to reduce the additional burden of the disease in Nepal.

MATERIALS AND METHODS

This was a community based cross-sectional study conducted in Baneshwar which is the heart of Kathmandu city. Housewives without DM, those with known DM and who were willing to be part of the study were enrolled in the study. Informed written consent of the participants was taken and Helsinki guidelines were followed. All the data obtained were kept confidential. Study population was constituted by all the housewives above 40 years of age residing in Baneshwar region. The study was carried out from July 2016 to January 2017 for the duration of 6 months. Systematic random sampling was used to select study subjects in the Baneshwar region.

Self designed structured questionnaire regarding the cause, symptoms, complications & Management of diabetes mellitus was administered to these patients and explained. The participants were required to answer the questionnaire using 'Yes' or 'No'. For those participants who did not know English, the questions were translated in Nepali Language.

A patient was adjudged as diabetic if she had Blood sugar < 140 mg/dL. Data was entered into Microsoft excel data sheet and was analyzed using SPSS 21 version software. Categorical data was represented in the form of frequencies and proportions. Chi-square was used as test of significance. Continuous data was represented as mean and standard deviation. P value < 0.05 was considered as statistically significant.

RESULTS

A total of 900 housewives took part in this study. The housewives with age 40 years or greater were included in this study. Majority of the subjects in the study population were between 40-68 years of age. . About 13% (120) of the respondents were illiterates and 87% (780) of them were literates (of which 22 % (201) were graduates, 234 were with primary education, and 345 were with secondary education (Figure 1). Around 24% (216) of the study populations were known diabetics. Among all the participants, 7% (63) new cases of DM were discovered. Among known diabetes patients, 52% (112) were found with controlled DM. Uncontrolled DM was seen in 48% of the DM housewives.

About the knowledge on signs and symptoms the awareness was more in delayed healing than other symptoms nighttime urination and blurring of vision (Figure 2). Subjects with past history of DM had higher knowledge than without diabetes mellitus.

Housewives with previous history of DM had higher knowledge regarding kidney disease complication. For example, 77% knew that DM can result in Kidney Failure, while 68% of them knew that DM can be associated with Heart Disorders. But, overall awareness about kidney failure and heart disease was 58 % and 43% respectively (Table 2).

Significant proportion of the participants said that DM can be managed by medicines alone (89 %), less participants were aware of improving feeding habit (25%) and by physical activity alone (62.3%). However, 60% of them believe that combination of

healthy diet, medicines & physical activity will help in management of DM. About 44.5% (400) of housewives were only aware of normal blood sugar level (Table 2)

Fig 1: Education level of housewives (N=900)

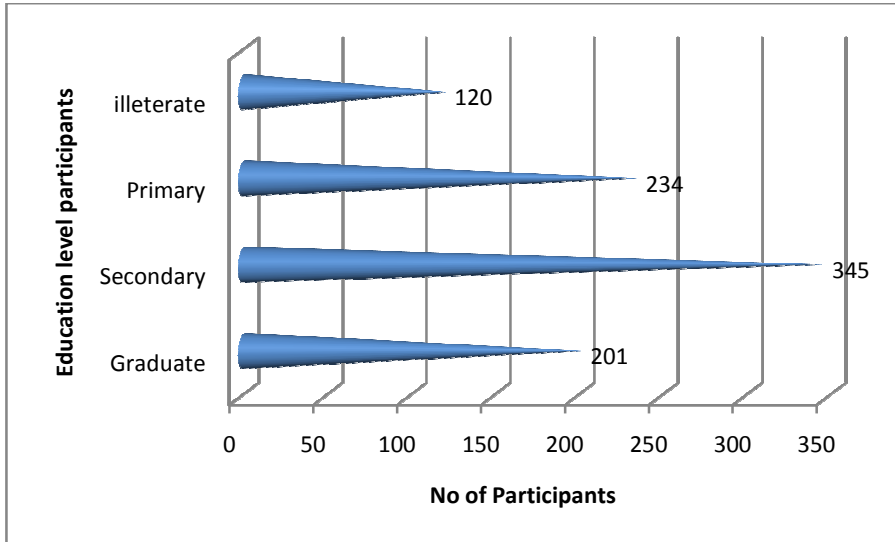


Fig: 2 Knowledge and awareness regarding signs and symptoms of Diabetes Mellitus (DM) among study housewives (N=900).

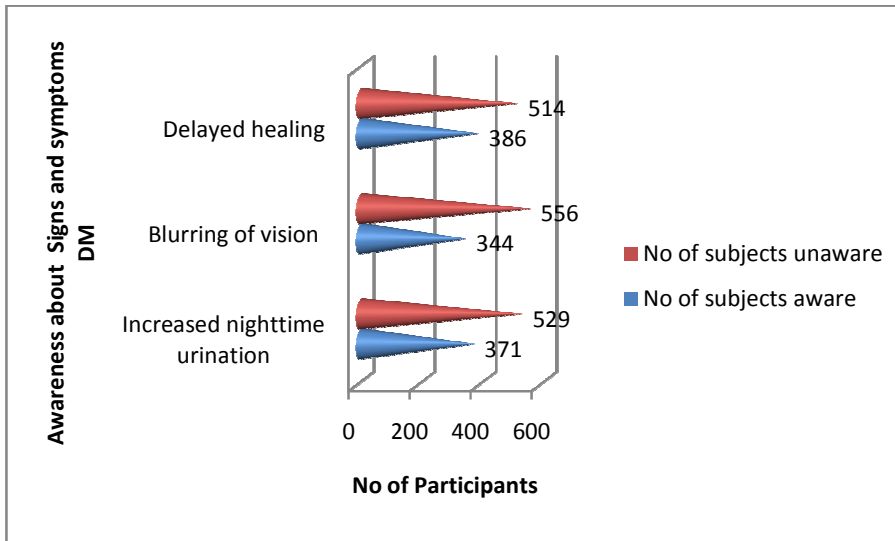


Table 1: Comparison of the knowledge of DM among housewives with or without history of DM.
 [N₁=216(H/O DM), N₂=684(Without H/O DM)]

| | Past H/O DM saying Yes | Past H/O DM saying No | Without Past H/O DM saying Yes | Without past H/O DM saying No |
|---|------------------------|-----------------------|--------------------------------|-------------------------------|
| It is a life style related disease (Yes/No) | 119 (55%) | 103 (45%) | 86 (12.6%) | 598 (87.4%) |
| It is the disease of adults over age 40 (Yes/No) | 118 (54.6%) | 98 (45.4%) | 200 (52%) | 184 (48%) |
| It is non curable disease (Yes/No) | 170 (78.7%) | 46 (21.3%) | 222 (78.7%) | 60 (21.3%) |
| It is due to deficiency of insulin (Yes/No) | 107 (49.5%) | 109 (50.5%) | 183 (29.1%) | 201 (70.9%) |
| Regular monitoring of blood sugar is necessary (Yes/No) | 187 (86.5%) | 29 (13.5%) | 204 (53%) | 180 (47%) |

Table 2: Knowledge of all the study housewives (N=900) regarding DM (95% CI)

| Knowledge of the housewives on DM | No of subjects saying Yes | Percentage of subjects saying Yes (%) | No of subjects saying No | Percentage of subjects saying No (%) |
|---|---------------------------|---------------------------------------|--------------------------|--------------------------------------|
| Regarding signs and symptoms | | | | |
| Increased nighttime urination | 371 | 41.2 | 529 | 58.8 |
| Blurring of vision | 344 | 38.2 | 556 | 61.8 |
| Delayed healing | 386 | 42.8 | 514 | 57.2 |
| Regarding risk factors | | | | |
| Intake of more sweets | 366 | 40.6 | 534 | 59.4 |
| Food habits | 300 | 33.3 | 600 | 66.7 |
| Mental Stress | 285 | 31.6 | 615 | 68.4 |
| Lack of physical activities | 243 | 27.0 | 657 | 73.0 |
| Family history | 291 | 32.3 | 609 | 67.7 |
| Regarding complications | | | | |
| Kidney failure | 518 | 57.5 | 382 | 42.5 |
| Heart disease | 470 | 42.2 | 430 | 47.8 |
| Eye damage with progressive vision loss | 545 | 60.5 | 355 | 39.5 |
| Regarding management | | | | |

| | | | | |
|--|-----|------|-----|------|
| Improving feeding habit | 230 | 25.6 | 670 | 74.3 |
| With Medicines only | 801 | 89.0 | 99 | 11.0 |
| Exercise only | 563 | 62.3 | 337 | 37.4 |
| Diet+ exercise | 572 | 63.6 | 328 | 36.4 |
| Diet+ exercise+ medicines | 539 | 59.9 | 361 | 40.1 |
| Regarding normal range of Blood sugar | 400 | 44.5 | 500 | 55.5 |

Fig: 3 Knowledge and awareness regarding risk factors of Diabetes mellitus (DM) among study housewives (N=900).

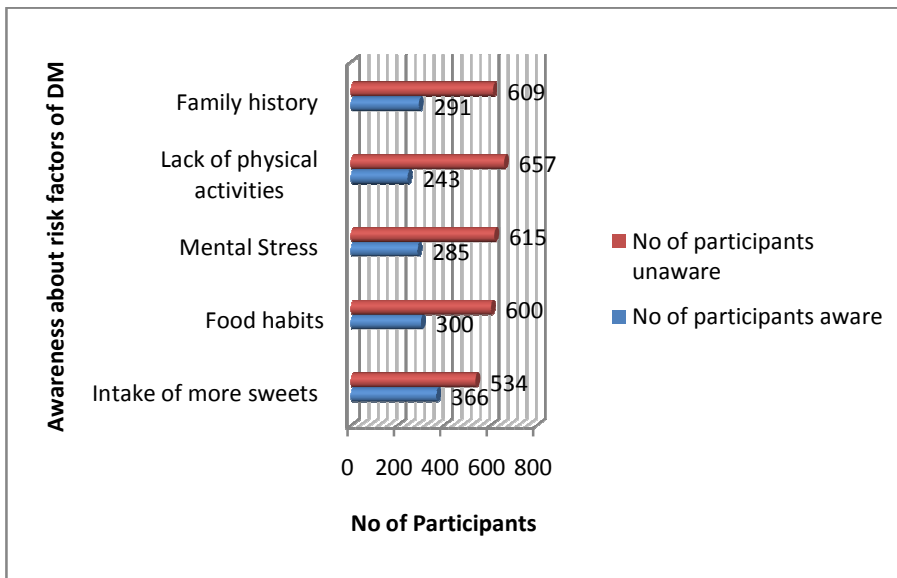


Fig: 4 Knowledge and awareness regarding complications of Diabetes Mellitus (DM) among study housewives (N=900).

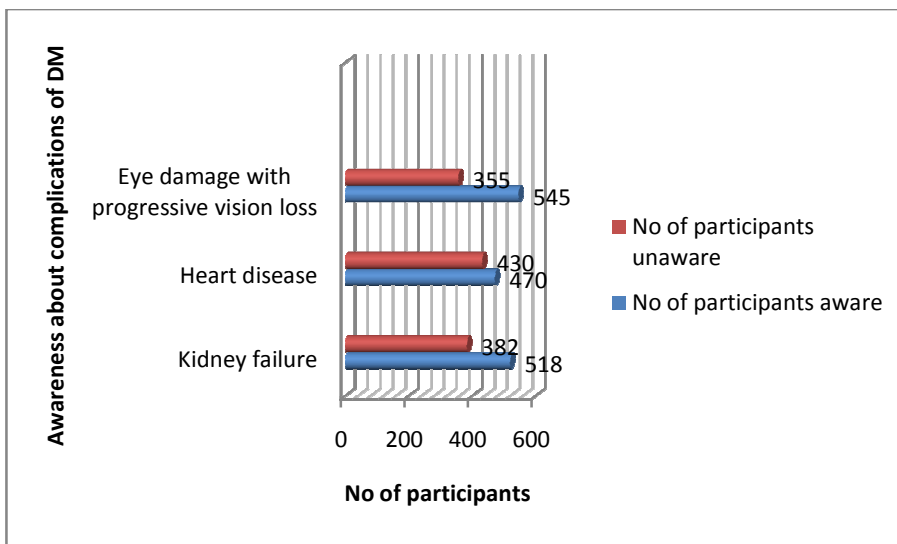
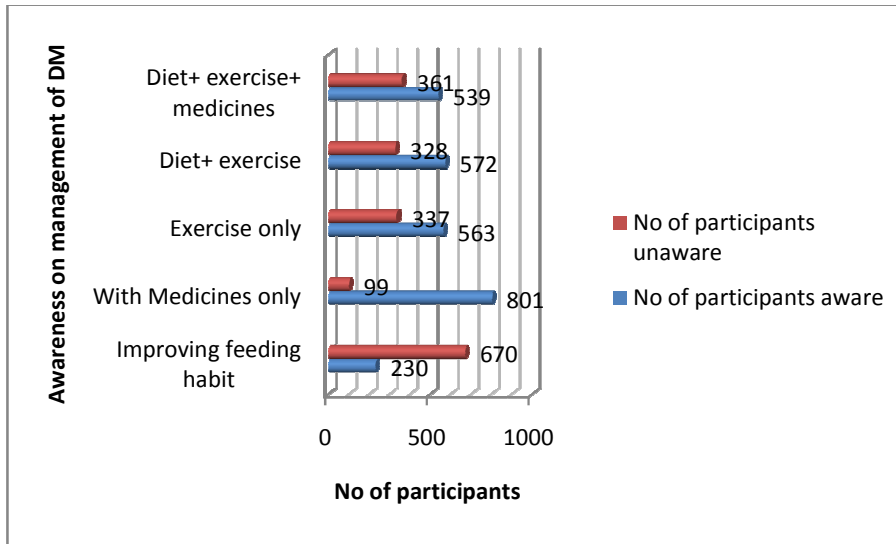


Fig: 5 Knowledge and awareness regarding management of DM among study housewives (N=900).



DISCUSSION

Management of Diabetes Mellitus (DM) is a challenging and difficult task especially in developing countries like Nepal. The major problem is the lack of knowledge about the risk factors of DM. Better the knowledge of diabetes, better is the normal blood glucose level.¹⁰⁻¹³

Despite the overall good education among participants, a little proportion (22%) only believed that diabetes can be cured (Table 1). In fact, DM is a chronic disease that requires ongoing monitoring and treatment⁽⁸⁾ which was similar to our study where our participants agree on regular monitoring of blood glucose.

Majority of our participants were unaware of the risk factors or the complications of DM. This clearly reflects a significant lack of knowledge about DM, which may have an adverse outcome in terms of prevention, which directly affects the health status of the country.

The results showed that only 45.5% (138) knew what "normal Blood glucose" level is and its normal value. In this study, the majority of the respondents were literates 87% (780).

In the study conducted by Mehta et al 42.9% were familiar with complications of diabetes⁽⁹⁾ which was similar to our study where 53.3 % of the overall population was aware about the complications. Gulabani et al. observed that the mean score in men was 2.84 points higher than that in women and the difference was found to be statistically significant[10]. However, in study conducted in Nigeria it is observed that female patients are more knowledgeable[11].

In this study there was significant difference observed in knowledge of DM among the diabetes housewives with respect to kidney failure (p < 0.014), symptoms like increased nighttime urination) (p < 0.042) and blurring of vision (p < 0.008). About 52% of the known DM housewives were in controlled situation where as 42% of them with uncontrolled DM.

CONCLUSION

It is vital to emphasize the fact that DM is a non-curable condition which can be managed well. Hence, it becomes necessary to focus on the cause of DM, risk factors, symptoms, complications and the management of diabetes. The need of today is

“Diabetes health education” for both diabetics as well as healthy adults. In developing country like Nepal, DM education will definitely play a important role in creating public awareness about diabetes ultimately reducing complications from Diabetes Mellitus.

Limitations of the study

The studies regarding awareness and prevalence of DM are mostly cross sectional and conducted in the urban areas and non-focused groups only. There is a need for more longitudinal studies about DM in vulnerable groups like the present study.

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