

## Original Research Article

# A study on diabetes mellitus among diabetic foot ulcer patients in a tertiary care centre

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### ABSTRACT

**Background:** Diabetes mellitus is a chronic disease which occurs either when the pancreas does not reproduce enough insulin, the hormone that regulates blood sugar level or when the body cannot effectively use the insulin it produces. Hyperglycemia or raised blood sugar level is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the system of the body especially nerves and blood vessels. Diabetes mellitus has become the cause for growing public health concern in developing countries as it has been for a long time in most developed ones. The reason for increase in prevalence of diabetes mellitus in developing countries may include unhealthy life style, rapid westernization, poor knowledge, negative attitude and poor practice towards diabetes mellitus among general population. Objective of the study was to find out the knowledge, and awareness towards diabetes mellitus among diabetic foot ulcer patients attending in a tertiary care Centre.

**Methods:** A cross sectional study was carried out in the surgical outpatient department of a tertiary care Centre. All diabetic foot ulcer patients attending surgical outpatient department for the period of two months was included. Juvenile diabetic patients, Type II diabetes mellitus patients with co morbidities are excluded.

**Results:** Out of the 100-study participant's majority are males (61%). 55% of the study participants are not aware of the major cause of diabetes mellitus. 92% of the population knew the accurate method of monitoring diabetes mellitus. 70.6% of people are aware of normal blood sugar level. 51% of people are aware of the complications of diabetes mellitus and 84.3% of people know the symptoms of diabetes mellitus. 68.6% of the population knew regular exercise can control diabetes mellitus yet only 50.8% of population exercise regularly.

**Conclusions:** This study reflects that there is a need to improve diabetic knowledge among the patients which can be achieved through health education.

**Keywords:** Awareness, Diabetic foot

### INTRODUCTION

Diabetes mellitus is a chronic disease which occurs either when the pancreas does not reproduce enough insulin, the hormone that regulates blood sugar level or when the body cannot effectively use the insulin it produces. Hyperglycemia or raised blood sugar level is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the system of the body

especially nerves and blood vessels. Diabetes mellitus has become the cause for growing public health concern in developing countries as it has been for a long time in most developed ones. The reason for increase in prevalence of diabetes mellitus in developing countries may include unhealthy life style, rapid westernization, poor knowledge, negative attitude and poor practice towards diabetes mellitus among general population.<sup>1</sup> India is the diabetic capital of the world with 41 million

Indians having diabetes. Every fifth diabetic in the world is an Indian.<sup>2</sup> This will increase to about 79.4 million by the year 2030.<sup>3</sup> The prevalence of diabetes is increasing and a leading cause of morbidity and mortality. There were one million deaths due to Diabetes mellitus in 2015.<sup>4</sup> More than 80% of diabetic death occur in low and middle income countries.<sup>5</sup>

Knowledge about diabetes mellitus, appropriate attitude and practice towards Diabetes mellitus are vital to reduce the prevalence and morbidity associated with diabetes mellitus but there exists a large gap in the knowledge, attitude and practice towards diabetes mellitus among diabetic patients. Obtaining information about level of awareness about diabetes mellitus in population is the first step in formulating a prevention program for Diabetes mellitus. The prevalence of Type 2 diabetes mellitus is projected to increase, making type 2 DM a pandemic.<sup>6</sup> There is inadequate guidance about the disease due to lack of understanding of patient's characteristics. Obtaining information about the level of awareness about diabetes in a population is the first step in formulating a prevention program for diabetes. Proper education and awareness program can change the knowledge and attitude of the public regarding diabetes, as a large gap between knowledge and attitude among the diabetes patients was found and proper knowledge regarding various aspects of health education program can improve the knowledge of patients and change their attitude.<sup>7,8</sup>

Knowledge about diabetes mellitus, appropriate attitude and practices are vital to reduce the prevalence and morbidity associated with diabetes mellitus.<sup>9,10</sup> Therefore the present study is conducted to study the knowledge, attitude and practice towards diabetes mellitus among diabetic foot ulcer patients attending surgical OPD SMIMS for a period of one month.

Objective of the study was to find out the knowledge, and awareness towards diabetes mellitus among diabetic foot ulcer patients attending in a tertiary care centre.

## METHODS

Cross sectional study was designed for outpatient department of, General Surgery Sree Mookambika Institute of Medical Science, Kulasekharam, Tamilnadu, India. Study was done for 2 months (October 2016-December 2016). 100 diabetic foot ulcer patients attending surgical OPD were studied.

Diabetic foot ulcer patients, juvenile diabetic patients, Type II diabetes mellitus patients with co morbidities are excluded. Pretested questionnaire was applied to study knowledge attitude and practice regarding diabetes mellitus.

After getting approval from Institutional Human Ethical Committee written informed consent was obtained from

the participants before enrolling them into study. Pretested questionnaire was applied by the chief investigator

## RESULTS

Present study was done in 100 diabetes foot ulcer patients, who attended the surgical OPD in a period of two months, among them 61 were males and 39 females of which 57.1% of people have went up to high school (Table 1). 55% of the study participants are not aware of the major cause of diabetes mellitus. 92% of the population knew the accurate method of monitoring diabetes mellitus. 70.6% of people are aware of normal blood sugar level.

**Table 1: Demographic details of the study population involved in the study.**

Variables	Number of participants 100 (%)
<b>Gender</b>	
Male	61
Female	39
Total	100
<b>Educational details</b>	
Illiterate	20
Primary school	18
High school	57
Secondary school	3
Graduate	2
<b>Age in years</b>	
30-40	2
40-50	30
50 or above	68

51% of people are aware of the complications of diabetes mellitus and 84.3% of people know the symptoms of diabetes mellitus. 68.6% of the population knew regular exercise can control diabetes mellitus yet only 50.8% of population exercise regularly. 68.6% of people follow planned diet and same 68.6% of the participants have missed the doses of diabetes medications. 52.9% of people are aware of blood sugar level falling below normal. 54.9% of population are aware of importance of exercise in controlling diabetes mellitus and 52.9% of people have increased their duration of exercise and 66.7% of people have reduced the carbohydrate intake for diabetes mellitus control. 37.3% of population has not done eye examination before and 35.3% of people have not done urine examination. 72.5% of population took proper care of their foot. 84.3% of population has felt that the life style changes they have made positive progress in their diabetes mellitus control.

## DISCUSSION

In present study 45% of the study participants are aware of the major cause of diabetes mellitus, while it is only

37% in rural Jammu and 38% in rural Bangladesh.<sup>1,4</sup> 84.3% of the population are aware of the symptoms of diabetes mellitus while it is only 69% in rural Jammu and it is 89.6% in Warangal.<sup>3</sup> In present study 51% of the population are aware of the complications while it is 66% in Warangal.<sup>3</sup> 92% of the study participants are aware of the accurate method of monitoring diabetes mellitus while it is 58.24% in rural Jammu.<sup>1</sup>

In present study 68.6% of the participants know regular exercise and planned diet control diabetes mellitus while 25.8% of participants in rural Jammu<sup>1</sup> are aware of life style modification can control diabetes mellitus. 62.7% of our population have done eye checkup previously while it is 48.35% in rural Jammu. 72.5% of our participants are taking care of their foot regularly while only 12.64% of rural Jammu are participants taking care of their foot and it is 42% in Mangalore.<sup>2</sup>

From this result, we can conclude that the of our study population is higher than in rural Jammu while still lower than that in Warangal. This may be due to the literacy of the participants as 30% of participants in rural Jammu and only 19.73% in Warangal are illiterate while 37.2% of our participants have completed secondary education.<sup>1,3</sup>

This reflects that there is a need to improve the knowledge attitude and practice of the people regarding Diabetes Mellitus through community health centers and health programs in mass campaign. It is well understood that diabetes management requires patient involvement for a better disease control.<sup>11,12</sup>

### Limitations

It was conducted only among the outpatients and hence may not be generalizable to the overall diabetic population.

### CONCLUSION

This study reflects that there is a need to improve diabetic knowledge among the patients which can be achieved through health education. This study help us to bring awareness regarding diabetes mellitus among people of lower socioeconomic group living in rural areas and illiterate individuals. The study also suggests that health programs in mass campaigns should target the less aware yet potentially harmful complications of diabetes such as renal failure, neuropathy and retinopathy. Regular screening and assessment of complications of diabetes needs to be inculcated in all patients with diabetes in order to delay their onset. It will be beneficial if diabetic clinic and information center for teaching diabetic patients is established. Also, nurses doctors, dietitians and other health team members should join hands to help

these diabetic patients live healthy by providing them with the right information at every available opportunity.

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