

KNOWLEDGE, ATTITUDE AND PRACTICES OF DIABETES RELATED FOOT CARE IN A SOUTH INDIAN URBAN CENTRE

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ABSTRACT

BACKGROUND

Diabetes mellitus is on the rise, and India ranks second in the world with most number of individuals with diabetes. Also, taking into account that we have a large population who follow the custom of barefoot walking, prevention of diabetes related foot disease, is a matter of major concern. Diabetes does not kill, it unfurls its wrath, slowly and gradually, but only if one allows. Its complications are devastating, and preventable too. An unhealthy lifestyle, amongst other environmental factors, is responsible for the steep rise of incidence of type 2 diabetes mellitus². In India, the disease is becoming more prevalent in rural areas, in the less affluent and in the younger population, mostly attributable to industrialization and rapid socioeconomic expansion. The aim of this study is to bring to light, day to day practices of individuals with diabetes and their foot care practices- whether unaware, ignorant in spite of knowledge, or if any difficulties interfere the practice self-care of the foot.

METHODS

This cross-sectional observational study was a validated questionnaire-based study. After permission was granted by the Institutional Ethics Committee for conduction of this observational study, a questionnaire based on knowledge, attitude and practices was formulated, and validated by 4 experts in the field of diabetes. These were mostly closed end questions. It was able to assess patient demography, attitude towards self-care, knowledge about diabetes related complications and reflected the efficiency of medical care personnel in educating the patient regarding self-care foot practices of his/her diabetes.

RESULTS

The culture of barefoot walking is still prevalent in 85.2% of the subjects particularly indoors; but with explanation by the treating doctor, 94.1% are willing to change their outlook, and adapt self-care practices. Foot related morbidity was seen in 29.6% of the individuals who participated in this study, but only 10.4 % have undergone amputation. 86.7% of the study population were experiencing sensory symptoms, suggestive of neuropathy. Only 31.0 % of the individuals with diabetes have knowledge regarding foot care related practices, as advised by their doctors. Actively participating in foot care activity was only taken up in a small proportion of patients. Observing the feet changes, wounds, dryness, making an extra effort to use a moisturizing cream etc. were barely executed. If advised aptly, lifestyle modification to include foot care measures can be implemented by 94.1 % of the patients, and 93 % are interested in caring for their feet. It was found that barefoot walking indoors was followed by 85.2% of the individuals, a custom generally followed in South East Asia.

CONCLUSIONS

Diabetes related foot disease is a risk factor for prolonged morbidity, and can be a large financial burden on the patient and their family. The burden will be reduced if the patients are educated regarding self-care practices.

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BACKGROUND

"The diabetic who knows the most, lives the longest" said Elliot Joslin, a scholar in the field of diabetes, in 1919.¹ Diabetes, does not kill, it unfurls its wrath, slowly and gradually, but only if one allows. Its complications are devastating, and preventable too. An unhealthy lifestyle, amongst other environmental factors, are to be implicated in the steep rise of incidence of type 2 diabetes mellitus.²

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In India, the disease is becoming more prevalent in rural areas, in the less affluent and in the younger population, mostly attributable to industrialization and rapid socioeconomic expansion.

Taking into the consideration that there will be lifelong expenditure for an individual with diabetes, and its complications, the family is usually unable to cope with socioeconomic cost factors. By providing health care for every strata of the population, one may have access to affordable medications, and will have a better chance to detect complications soon, and prevent long term morbidity and mortality.

This emphasizes the need for a multi-faceted, prolonged strategy to minimize the burden of diabetes and its complications.³

Due to its long-term implications, the given population may experience a negative attitude towards, and develop psychological problems, which eventually lead to a poor diabetes management, and in return worsen the burden.^{4,5}

Effective management of diabetes requires strong and consistent cooperation of the patient.⁶

One of the major, unexpected sources of financial burdens in diabetes, is foot related disease in developing countries due to financial burdens and lack of education, apart from cultural, that vary from country to country. Considering the rate of recurrence, prevention is key in reducing this burden.⁷

Many patients rely on medications alone, neglecting other measures of self-care, which are equally, if not more important. In many places, foot care is the least practiced. This could reflect lack of understanding of its importance of the consequences by persons with diabetes.^{8,9}

A proper diabetes education has shown a promising improvement on foot self-care practice.¹⁰

A few studies in India have been done, with this validated questionnaire we hope to shed some light into the knowledge attitude and practice of diabetes foot related self-care.¹¹

METHODS

After permission was granted by the Institutional Ethics Committee for conduction of this Observational study, a Questionnaire based on knowledge, attitude and practices was formulated, and validated by 4 experts in the field of diabetes. These were mostly closed end questions. It was able to assess patient demography, attitude towards self-care, knowledge about diabetes related complications and reflected the efficiency of medical care personnel in educating the patient regarding self-care foot practices of his/her diabetes.

In this cross-sectional study, a total of 135 patients, based on convenience sampling were questioned. All subjects that consented (Written) were handed the questionnaire and if clarification was required a trained investigator helped. The questionnaire was in English and translated to Malayalam and Kannada.

Statistical Analysis

Data was collected and analysed using standard statistical chi-square test, p < 0.05 statistically significant. Data was entered in Microsoft excel and analysis was done using SPSS version 22.

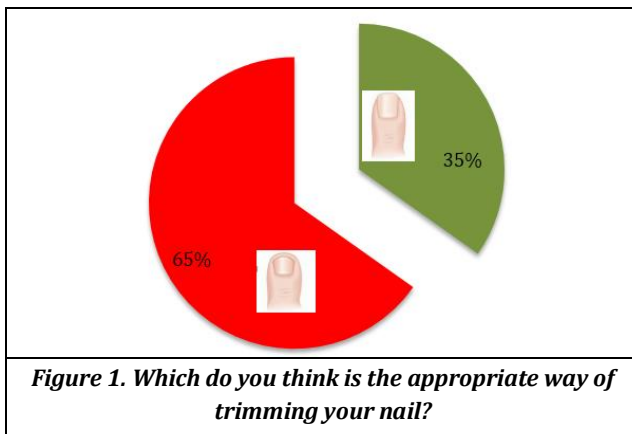
RESULTS

Foot related morbidity was seen in 29.6% of the individuals who participated in this study, but only 10.4 % have undergone amputation. 86.7% of the study population were experiencing sensory symptoms, suggestive of neuropathy. Only 31.0 % of the individuals with diabetes have knowledge regarding foot care related practices, as advised by their doctors. Actively participating in foot care activity was only taken up in a small proportion of patients. Observing the feet changes, wounds, dryness, making an extra effort to use a moisturizing cream etc., were barely executed. If advised aptly, lifestyle modification to include foot care measures are feasible to be implemented by 94.1 % of the patients, and 93 % are interested in caring for their feet.

It was found that Barefoot walking indoors, was done followed by 85.2% of the individuals a custom generally followed in South East Asia.

	Questions	Yes (%)	No (%)
History of Foot Problems			
1	Have you ever had a foot wound?	29.60	70.40
2	Have you ever had an amputation of a toe, foot or leg?	10.40	88.60
Current Foot Problems			
3	Do you have an ulcer, sore or blister on your feet at this time?	30.40	69.6
4	Do you have any altered sensations in your feet?	86.70	13.3
Foot Care Knowledge			
5	Is it true that all patients with diabetes develop lack of sensations in their feet?	26.70	73.30
6	Is it true that all patients with diabetes develop foot ulcers?	17.80	82.20
7	Are you aware that smoking can reduce blood flow in your feet?	24.40	75.60
8	Do you know that if you have loss of sensation in your feet, you are prone to have foot ulcers?	20.70	79.30
9	Has your doctor advised you regarding foot care measures?	31.90	68.10
Foot Care Activity			
10	Do you examine your feet?	39.30 (1*)	60.70 (2*)
11	Do you wash your feet every day?	85.90	14.10
12	Do you dry well between the toes?	43.70	56.30
13	Do you use moisturizing cream on your feet?	20.70	79.30
14	Do you cut your own toenails?	84.40	15.60
15	Which do you think is the appropriate way of trimming your nail?	34.80 (1**)	65.20 (2**)
16	Do you walk barefoot inside the house?	85.20(a)	14.80(b)
	Do you walk barefoot outside the house?	35.60 (a1)	64.40 (b1)
17	Do you/would use home remedies on your wounds?	27.40 (a2)	14.80 (b2)
Foot Care Improvement			
18	Are you willing to change your food habits and do regular exercise to prevent further complications due to diabetes?	94.10	05.90
19	Would you like to have a handout on how to care for your feet?	93.30	06.70
Footwear Activity			
20	Do you wear specialized diabetes footwear (MCR/MCP)?	10.40	89.60
21	Any self-alteration to your footwear?	14.80	85.20
22	Do you check your shoes before you put them on?	42.20	57.80
Footwear Improvement			
23	Are you willing to use special footwear prescribed by your doctor?	88.10	11.90
24	Will you wear indoors as advised by your doctor?	87.40	12.6

Table 1. Response to Validated Questionnaire on Diabetes Related Foot Care



DISCUSSION

Foot ulcers are a major reason for morbidity, dysfunctionality and even mortality amongst individuals with diabetes. At least 15 % of individuals will develop a diabetes foot ulcer once in their life time.¹² In our study, 30.4% of the study population had an ulcer, sore or blister on the foot at the given time, and 86.7 % of our study population experienced neuropathy symptoms. Only 26.7 % of individuals with diabetes are aware of neuropathy related complications of the foot in diabetes. In an earlier study done in a South Indian City, it was revealed that "Knowledge regarding causes of diabetes, its prevention and the methods to improve health was significantly low among the general population."¹³

In our study, only 31.9 % of the population have been advised foot care measures by their physicians. In a study done by Anu. M et al, a significant association of medication adherence in both glycaemic control and peripheral neuropathy.¹⁴

Nathan et al, 2005,¹⁵ who emphasized patient education, understanding and participation are vital because the complications of diabetes are far less common and less severe in people who have well- managed blood sugar levels.^{14,16,17,18}

Comfort and cultures in warm and less affluent countries call for lesser foot wear use, more so in rural and remote locations.¹⁹

In our study, 85.2 % of our subjects walked barefoot within the house, and 35.6 % went outdoors barefoot as well. Bare foot walking was proven to be an important risk factor for diabetic foot ulcers by S. A Jayasingha et al. Their study committed to confirming the link between foot ulceration and foot wear use, by showing that barefoot diabetics had a risk ratio of 2.21 of foot ulcers, compared with footwear users. The importance of footwear to prevent diabetic foot ulcers (as well as web-space infections and toe nail infections) was further supported by the finding that those using footwear for a longer duration (>10 hours per day) had lower rates of ulcers than those who used footwear <10 hours.²⁰

Improvement of foot care techniques via better education on lifestyle modifications and foot care techniques are acceptable by 94.1 % of the study population.

Specialised footwear has been used by only 10.4 % of our study population, the others use regular footwear without consideration of the shoe value of specification for their foot wounds or abnormalities. 88.1 % of the population are willing to use specialised footwear if advised by the doctor, and also accept using footwear within the home, a contrast from the Indian culture of not wearing.

CONCLUSIONS

Patient education is an important aspect of diabetes foot care, communication between physician and their patients is key. Intensive foot education by a multi-disciplinary preventive team can improve diabetes related foot outcomes substantially.

Limitations.

A small study population.

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