

Knowledge of Diabetic Patients about Foot Care

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ABSTRACT

Objective: The present study was undertaken to determine the level of knowledge and practice of foot care among diabetic patients.

Methods: This cross-sectional study was conducted in the Faculty of Public Health, Atish Dipankar University of Science & Technology, Dhaka over a period of 6 months. A total of 100 patients of both sexes with type I and type II diabetes for at least six months were the study population. The level of knowledge measured on a 0-4 Likert Scale, where 0 means 'grossly dissatisfied' and 4 'highly satisfied' with 'partially satisfied' 1, 'more or less satisfied' 2, and 'satisfied' 3 in between them. First the level of knowledge was assessed for every discrete question pertaining to knowledge. Then all these scores were added together to ascertain the overall level of knowledge. Data were processed and analysed using computer software SPSS (Statistical Package for Social Sciences), version 11.5.

Result: This study showed that 7% of diabetic patients were below 40 years, 23% between 40 - 50 years, 43% between 50 - 60 years and the remaining 27% 60 or > 60 years old. Female patients were predominant giving a female to male ratio of roughly 2:1. About 60% of the patients were rural residents and rest 40% urban. Over two-thirds (68%) of the patients belonged to middle class, 29% to lower class and 3% to upper class. Forty five percent of the patients were below SSC level educated, 8% SSC, 7% HSC and 13% graduate and higher level educated. Twenty seven percent of patients were illiterate. Assessment of knowledge about foot care revealed that over 8% of the respondents' knowledge about foot care was highly satisfactory, 42% satisfactory, 40% more or less satisfactory and 8% poor level of knowledge. However, practice level about foot care was inappreciably low. Over half (52%) of the respondents inspected their feet regularly, 42% washed feet with warm water, 46% trimmed toe-nails straight across, 63% measure feet before buying foot-wear and only 8% received advice from doctors before buying them.

Conclusion: The study concluded that diabetic patients are aware of their foot care. They also have good knowledge about how to take care of their feet. But they are often reluctant to translate it into practice. It is perhaps, they do not have the knowledge about the consequences if practice is lacking.

Key words: Knowledge, diabetic patients and foot care.

INTRODUCTION

Diabetes mellitus (DM) is believed to be the commonest and most devastating chronic disease in human history. It has afflicted mankind for thousands of years and continues to do so at an exponential rate.¹ It is being increasingly recognized as a global epidemic with devastating humanitarian, social and economic consequences. The rise in prevalence of DM is likely to bring a concomitant increase in its complications among diabetic patients. The

important complication of DM are the foot problems; these complications constitute an increasing public health problem and are a leading cause of admission, amputation and mortality in diabetic patients. The prevalence of diabetic foot ulcer (DFU) ranged between 1.0% to 4.1% in the United States (US), 4.6% in Kenya, and 20.4% in Netherlands.²

In 2000, Bangladesh had 3.2 million people with diabetes and was listed globally at 10th position, which would occupy the 7th position with 11.1 million

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diabetics in 2030.³ The prevalence of diabetes in Bangladesh was 5.2% (urban 6.9% and rural 4.3%) in 1994-95 which increased to 9% (urban 11.2% and rural 6.8%) in 2003-04.⁴ The level of practice of the foot care principles are poor and foot problems account for a significant hospital admissions of patients with diabetes.

The etiology of the foot problems in Bangladesh is primarily peripheral neuropathy; peripheral vascular disease being rare.¹ It is really regrettable that surgical intervention or amputation is frequently required in our country for a neuropathic foot, which is entirely preventable. An understanding of the causes of these problems enables early recognition of patients at high risk. A study on self care of diabetic foot has not been conducted previously in our country. Therefore this study aims to assess the level of knowledge and practice of foot care among patients with chronic diabetic foot ulcers.

MATERIALS & METHODS

This cross-sectional study was conducted in the Faculty of Public Health, Atish Dipankar University of Science & Technology over a period of 6 months between January 2012 to June 2012. Data were collected from diabetic patients attended at Out-patient Department of BIRDEM Hospital, Shahbag, Dhaka. The following enrollment criteria were applied for selection of patients. Patients of both genders with type I and II diabetes for at least six months were included in the study. Patients who developed foot ulcers or DM patients unable to answer the questions because of altered mental state were excluded from the study. A total of 100 patients meeting the eligibility criteria were consecutively included in the study. Patients' level of knowledge was measured using Likert Scale. To assess the level of knowledge of the respondents about foot care, there were a number pertinent questions. As there were more than one questions in assessing respondents' level of knowledge, combined scores were used to measure their level of knowledge. The level of

knowledge measured on a 0-4 Likert Scale, where 0 meant for 'grossly dissatisfied' and 4 'highly satisfied' with 'partially satisfied' 1, 'more or less satisfied' 2, and 'satisfied' 3 in between them. First the level of knowledge was assessed for every discrete question pertaining to knowledge. Then all these scores were added together to find the overall level of knowledge. The statistical analyses were performed using computer software SPSS (Statistical Package for Social Sciences) and the test statistics used to analyse the data were descriptive statistics.

RESULTS

Demographic characteristics:

Seven percent of diabetic patients were below 40 years, 23% between 40 - 50 years, 43% between 50 - 60 years and the remaining 27% 60 or > 60 years old. The mean age of the patients was 52.6 ± 10.6 years and the youngest and oldest patients were 26 and 77 years respectively. Forty five percent of the patients were below SSC level educated, 8% SSC, 7% HSC and 13% graduate and higher level educated. Twenty seven percent of patients were illiterate (Table I).

TABLE I. Distribution of patients by demographic characteristics (n =100)

Demographic characteristics	Frequency	Percentage
Age (years)		
<40	07	7.0
40 - 50	23	23.0
50 - 60	43	43.0
≥60	27	27.0
Educational status		
Illiterate	27	27.0
Below SSC	45	45.0
SSC	08	8.0
HSC	07	7.0
Graduate & above	13	13.0

Respondents' knowledge and practice about foot care

Knowledge of the respondents was assessed by opinion seeking. Majority 92% of the respondents was of the opinion that diabetic patients should

take medication and look after their feet regularly because minor injuries may go unnoticed, foot wounds and infection may not heal quickly or because they may get a foot ulcer which requires regular washing and dressing feet. The practice level about foot care was, however, inappreciably low as evident from the table that 52% of the respondents inspected their feet regularly, 42% washed feet with warm water, 46% trimmed toe-nails straight across, 63% measure feet before buying foot-wear and only 8% received advice from doctors before buying them (Table II).

TABLE II. Respondents' knowledge and practice about foot care (n = 100#)

Respondents' foot care behaviour	Frequency	Percent
Knowledge:		
DM patients should take medication regularly	92	92.0
DM patients should look after their feet because they may not feel a minor injury to their feet	89	89.0
DM patients should look after their feet because wounds and infection may not heal quickly	89	89.0
DM patients should look after their feet because they may get a foot ulcer	85	85.0
DM patients should not smoke because smoking causes reduced blood circulation in the feet	33	33.0
Practice:		
Regular inspection of feet	52	52.0
Regular washing of feet	90	90.0
Washing of feet with warm water	42	42.0
Trimming of toe nails straight across	46	46.0
Measure feet before buying your shoes	63	63.0
Taking advice from doctor before buying shoes	08	8.0
Ever inspect inside of footwear	48	48.0
Regular walking with barefoot	60	60.0
Cleaning of nails with sharp instrument	16	16.0
Add irritants to water before foot cleaning	11	11.0
Wear elasticized hosiery	37	37.0

#Total will not correspond to 100%, because of multiple responses

Respondents' opinion about foot care practice:

Over three quarters (76%) of the patients held the opinion that foot should be inspected daily, 6% weekly, another 6% fortnightly and 1% monthly. Majority (94%) of the respondents was

of the opinion that in case of redness/bleeding between toes they should consult with a physician first. Asked about if they had a corn or hard skin lesion, what would they do, 29% told that they would wash with antiseptic first and 7% told wash with water. Two percent of the patients were of the opinion that feet should be washed once, 10% thrice and 83% five times a day. Regarding temperature of the water used for washing of feet, over half (52%) of the respondents thought it should be tepid water and 38% room temperature. In another question how often they should inspect inside of their footwear for objects or torn lining, 6% said once daily and 63% told each time before wearing (Table III).

TABLE III. Respondents' opinion seeking about foot care practice (n - 100#)

Respondents' opinion about foot care practice	Frequency	Percentage
How often feet should be inspected		
Daily	76	76.0
Weekly	06	6.0
Fortnightly	06	6.0
Monthly	01	1.0
Not needed at all	11	11.0
If you found redness/bleeding between toes what is the first thing you should do		
Consult with physician	94	94.0
Not known	06	6.0
Even if you have never had a corn/hard skin lesion, what would you do if you had one		
Wash with antiseptic	29	29.0
Wash with water	07	7.0
How often you think your feet should be washed		
Once daily	02	2.0
Thrice daily	10	10.0
Five times a day	83	83.0
What temperature of water do you think should wash your feet in		
Tepid water	52	52.0
Room temperature	38	38.0
How often do you think should inspect inside of your footwear for objects or torn lining		
Once daily	06	6.0
Each time before wearing	63	63.0

#Total will not correspond to 100%, because of multiple responses.

Level of knowledge about foot care in DM patients:

Measured on Likert scale, over 8% of the respondents' knowledge about foot care was found to be highly satisfactory, 42% satisfactory, 40% more or less satisfactory and 8% poor level of knowledge. Two percent of the respondents' answer was grossly dissatisfactory (Table IV).

TABLE IV. Distribution of the respondents by level of knowledge about foot care

Level of knowledge about foot care	Frequency	Percentage
Grossly dissatisfactory	02	2.0
Poor	08	8.0
More or less satisfactory	40	40.0
Satisfactory	42	42.0
Highly satisfactory	08	8.0

DISCUSSION

The result of this study showed that 70% of the respondents were 50 or > 50 years old with a female predominance (female to male ratio 2:1). Rural residents and middle class formed the main bulk of the respondents. Forty five percent of the patients were below SSC level educated and 27% were illiterate. Assessment of knowledge about foot care revealed that only 8% of the respondents' had highly satisfactory, 42% satisfactory, 40% more or less satisfactory and 8% poor level of knowledge.

Chamil & Madawa⁵ in a recent study reported that out of 110 research subjects, majority was female with age ranging between 51 and 60 years. This shows that female diabetics after the age of 50 are more often vulnerable to develop the foot problem. It is well known that diabetic foot disease occur in long standing diabetics because the pathological process takes about 10 years to develop. This situation may occur due to delayed recognition and diagnosis of diabetes mellitus. Two studies conducted abroad showed that average age of the diabetic patients was between 50 - 59 years (40.3%) and average duration of diabetes among patients was 8.2 years.^{6,7} Nearly 60% of patients were from low socio-economic status and 36% were illiterate.

The findings in our study are consistent with the findings of other investigators worldwide. Patients with poor educational level and low socioeconomic status had generally lower level of knowledge of foot care, while gender and age differences were not significantly associated with the knowledge of foot care. The relationship between education and foot care among diabetic patients has been observed in similar studies in India, Iran and Pakistan where illiterate patients were the least knowledgeable.⁸⁻¹⁰ Women and those above the age of 50 were less knowledgeable about foot care, although these associations were not statistically significant. These studies showed that a very small proportion of the diabetic patients (10.2%) had good practice of diabetic foot care, while almost half (49.4%) had a poor practice of diabetic foot care.¹¹

This poor level of foot care practice is in agreement with other previous studies. Some of the inadequacies of foot care practice in their subjects included non-inspection of inside of their footwear (47.7%), non inspection of their feet (40.9%), and 88.6% failing to get appropriate sized footwear. These poor practice of foot care may be attributed to the lack of knowledge among the respondents as 78.4% of those with poor foot care practice also had poor knowledge of foot care. This association was further corroborated as one-third (33%) of the respondents reported lack of knowledge as greatest barrier to good foot care practice.¹²

The result of this study showed that a greater proportion of diabetic patients had satisfactory or more or less satisfactory level of knowledge about foot care. But lack of practice about the signs of poor foot circulation and reluctance to go to specialist when warning signs like redness/bleeding occurs between toes may contribute to the development of skin manifestations; Importance of regular inspection of the footwear for objects or torn lining and regular inspection of the feet should also be born in mind and practiced. Great efforts would be needed by

health care providers to motivate the diabetic patients in order to promote compliance to foot care.

CONCLUSION

The study concluded that diabetic patients are aware of their foot care. They also possess good knowledge about how to take care of those manifestations. But they are usually reluctant to bring it into practice. It is perhaps, they do not have the knowledge about the consequences if practice is lacking.

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