KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING DIABETIC FOOT CARE AMONG DIABETIC PATIENTS IN A HOSPITAL OF RUPANDEHI

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ABSTRACT

INTRODUCTION

Diabetes Mellitus is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Diabetic foot ulcers are common and are estimated to affect about 15% of all individuals with diabetes during their lifetimes. The objective of the study is to assess the knowledge, attitude and practice regarding diabetic foot care among diabetic patients.

MATERIAL AND METHODS

Cross sectional descriptive design study was conducted among 384 diabetic patients selected by using purposive sampling technique. Structured interview questionnare was used for data collection for 6 months periods and was analyzed by using descriptive and interferential statistics with Statistical Package for Social Sciences software version 20.

RESULTS

The findings of the study revealed that 23.7% had adequate level of knowledge regarding diabetic foot, 96.9% of the respondents had positive attitude regarding diabetic foot care and 39.0% of the respondents had good practice regarding diabetic foot care.

CONCLUSION

Based on the findings, it is concluded that more than three fourth (76.3%) of the diabetic patients had inadequate knowledge regarding diabetic foot. Almost cent percent (96.9%) of the diabetic patients had positive attitude towards the diabetic foot care. More than three fifth (61.0%) of the diabetic patients had poor practices regarding diabetic foot care.

KEYWORDS

Attitude, Diabetic foot, Knowledge, Practices

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INTRODUCTION

Diabetes prevalence has been rising more rapidly in low-and middle-income countries and 1.5 million deaths are directly attributed to diabetes each year. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades.[1] Diabetes was the ninth leading cause of death with an estimated 1.5 million deaths worldwide directly caused by diabetes.[2] Hyperglycemia is a common effect of uncontrolled diabetes mellitus and over time leads to serious damage to many parts of the body's system especially nerves and blood vessels.[3] Peripheral vascular disease may lead to bruises or injuries that do not heal, gangrene, and, ultimately, amputation.[4] The prevalence of prediabetes and diabetes was high in Nepal, while its awareness, treatment, and control were low. There was a wide variation in diabetes prevalence across the provinces in Nepal, the lowest 2% in Province 6 to the highest 10% in Province 3 and Province 4.[5] Diabetic foot ulcers are common and are estimated to affect about 15% of all individuals with diabetes during their lifetimes. Peripheral vascular disease contributes to about half of all amputations in people with diabetes. Many foot ulcers might be prevented by regular foot inspections, access to foot care, and adequate footwear. However, the majority of individuals with diabetes do not get regular inspections of their feet, adequate shoes, or proper foot care.[6] The most common diabetic complication known by diabetic patients was diabetic foot (51.5 %), followed by hypertension (35.4 %), neuropathy (29.2 %), hypoactive sexual arousal (25.4 %), arousal disorder (21.5 %), retinopathy (17.7 %), heart disease (9.2 %), and nephropathy (5.4 %).[7] In a study conducted in 2020 revealed that more than half of the patients reported some foot problems, while 9.4% have had active or healed ulcerations. The mean scores for knowledge, attitude, and practice were 8.576, 4, and 13, respectively. The mean practice score 13 from a maximum of 26 indicates that the patients were lagging in the management of diabetes and its foot complications, despite better understanding and positive attitude.[8] To develop effective patient education and improve patients' diabetic control and own complications, educational strategies are needed so as they may help diabetic patients to improve self-knowledge and recognition of early signs and symptoms of DM complications, and this will prevent further deterioration, which will improve quality of life and increase life expectancy for those patients.[9] Adequate knowledge is a major component of diabetes management. Increasing patients' knowledge regarding DM and its complications has significant benefits concerning adherence to treatment and reducing complications.[10] Diabetes may also reduce blood flow to the feet, making it harder to heal an injury or resist infection. Health education and counseling plays an important role for the prevention of complications that will subsequently help to improve the quality of life of patients. Diabetic foot care is essential as diabetes can be dangerous to feet even a small cut can produce serious consequences. Several studies were conducted on knowledge and management of diabetes across the globe. In researcher's knowledge few studies have been conducted on assessing awareness, attitude and practice of complications in particular of diabetic foot care. Therefore, the researcher is interested to conduct the study on this topic.

MATERIAL AND METHODS

A cross sectional descriptive study was used to find out knowledge, attitude and practices regarding diabetic foot care among diabetic patient in a hospital of Rupandehi, 384 diabetic patients were selected as study sample by using purposive sampling technique. The data was collected by using pretested structured interview questionnaire developed by researcher herself by reviewing the related literatures. Pre-testing of the instrument was done on 38 diabetic patients in outpatient department of UCMS-TH who were excluded in the study. After pretesting, no any modification was done.

There were 10 knowledge related questions, 10 attitude related questions and 10 practice related questions regarding diabetic foot. The scoring range of knowledge questions was 10 (maximum) to 0 (minimum). A cut off value was set at 5. Those scoring <5 was considered inadequate knowledge whereas ≥ 5 was considered as adequate knowledge. Attitude regarding diabetic foot care was assessed by asking 10 questions using 3-point Likert scale. Each question was labelled with "Disagree", "Not sure" and "Agree". A score of 2 was given to "Agree", 1 was given to "Not sure" and 0 was given to "Disagree". With a score range of maximum 20 to minimum 0, the scale was classified as positive attitude with score ≥10 and negative <10. Practice regarding diabetic care was assessed by asking 10 Yes/No questions. A score of 1 was given to "Yes" and 0 was given to "No" response which makes a score range from 0 (minimum) to 10 (maximum). A cut off value was set at 5. Those scoring <5 was labelled poor practice whereas ≥ 5 was labelled good practice.

Data collection was done within six months periods from 9th January 2023 to 9th July, 2023. Ethical approval was obtained from Institutional review Committee with the reference number 190/22 of Universal College of Medical Sciences. Administrative approval was obtained from concerned authority prior to data collection. Researcher contacted each diabetic patients who had been diagnosed as diabetes mellitus and attended the outpatient department for follow-up for data collection. Written informed consent prior to data collection was obtained from each respondent and interviewed separately. Researcher interviewed 4 to 5 respondents per day. The data was analyzed by using descriptive and inferential statistics with Statistical Package for Social Sciences version 20.

RESULTS

Among 384 respondents 45.3% of the respondents were between the age of 41 to 60 years with the mean age of 57.42 ± 13.1. Slightly more than half (51%) of the respondents were male and 41.4% of them have less than 5 years of duration of illness. Most (80.7%) of the respondents were aware that regular exercise helps to prevent diabetic foot, 78.9% of the respondents answered lowering blood sugar helps to prevent diabetic foot, 75.3% of the respondents answered diabetic patients who walks bare foot are at high risk of diabetic foot and 70.1% of the respondents answered uncontrolled diabetes leads to diabetic foot. Only 15.9% of the respondents answered smoking reduces blood flow to the feet. Nearly half (45.4%) of the respondents answered doctors as a source of the information regarding diabetic foot.

Out of 384 respondents, 94.8% of the respondents agreed that diabetic patient should visit a doctor when there is any infection or wound in the foot. Most (89.6%) of the respondents agreed on diabetic patient should check for any wound on their foot daily, diabetic patients can perform regular exercise to prevent diabetic complications and diabetic patients can change their food habit to prevent diabetic complication respectively. Likewise, 78.7 % of the respondents agreed on nutrition is an important factor in controlling blood sugar and diabetic patients are required to practice special foot care respectively. Also, 43.2 % of the respondents agreed that diabetic patient should make periodic visits to the diabetic foot according to doctor's order.

Almost all (90.4%) of the respondents practice checking water temperature before showering and washing foot. Most (87.5%) of the respondents washes their foot daily, 80.2% of the respondents does not walk bare foot and 73.2% of the respondents check shoes before walking. Out of 384 respondents, 58.1% of the respondent trims toe nail regularly and 32.6% of the respondents dry their feet daily. Very few (9.1%) of the respondents dry the area between toes after washing.

Table 1 shows respondents' overall level of knowledge, attitude and practice regarding diabetic foot care.

Table 1. Respondents' overall level of knowledge, attitude and practices regarding diabetic foot care

Variables	Frequency	Percentage
Level of knowledge		
Adequate	91	23.7
Inadequate	293	76.3
Level of attitude		
Positive	372	96.9
Negative	12	3.1
Level of practice		
Good practice	150	39.0
Poor practice	234	61.0

There is statistically significant association between level of knowledge and gender (p-value= 0.008), educational level (p-value= 0.003), occupation (p-value= 0.0001), family history of diabetes (p-value= 0.009), average number of clinical visits per year (p-value = 0.001) and blood glucose monitoring (p-value= 0.0001) as shown in table 2. There is no statistically significant association between the respondents' level of attitude regarding diabetic foot care with socio - demographic variables.

Table 2. Association of respondents' level of knowledge regarding diabetic foot with socio-demographic variables

Variables	Level of knowledge Adequate No. (%)	Inadequate No. (%)	x^2	*P* value
Gender				
Male	55 (29.3)	133 (70.7)	6.947	0.008
Female	35 (17.9)	161 (82.1)		
Educational level				
Upto class 10	25 (22.1)	88 (77.9)	11.883	0.003
Upto class 12	20 (36.4)	35 (63.6)		
Bachelor	21 (50.0)	21 (50.0)		
Occupation				
Business	22 (32.4)	46 (67.6)	35.530	0.0001
Farmer	14 (20.0)	56 (80.0)		
Foreign	1 (12.5)	7 (87.5)		
Job	21 (55.3)	17 (44.7)		
Ex-army	5 (38.5)	8 (61.5)		
Others	27 (14.4)	160 (85.6)		
Family History of DM				
Yes	43 (30.9)	96 (69.1)	6.825	0.009
No	47 (19.2)	198 (80.8)		
Clinic visit				
1-3 times	31 (17.8)	143 (82.2)	17.260	0.001
4-6 times	35 (22.7)	119 (77.3)		
7-9 times	14 (36.8)	24 (63.2)		
10-12 times	10 (55.6)	8 (44.4)		
Blood glucose monitoring				
Self monitoring	8 (72.7)	3 (27.3)	19.775	0.0001
Local pharmacy	19 (32.8)	39 (67.2)		
Hospital	63 (20.0)	152 (80.0)		

Significance level at p<0.05

There is statistically significant association between the level of practice and age (p-value= 0.049), gender (p-value= 0.035), occupation (p-value = 0.0001), years of diagnosed with diabetes (p-value= 0.004) and average number of clinic visit per year (p-value = 0.001) and as shown in table 3.

Table 3. Association of respondents' level of practice regarding diabetic foot care with socio-demographic variables

Variables	Level of Practice Good No (%)	Poor No (%)	x^2	*p* value
Age in years				
21-40	18 (40.9)	26 (59.1)	6.046	0.049
41-60	78 (44.8)	96 (55.2)		
Above 60	53 (31.9)	113 (68.1)		
Gender				
Male	83 (44.1)	105 (55.9)	4.434	0.035
Female	66 (33.7)	130 (66.3)		
Educational level				
Upto class 10	47 (41.6)	66 (58.4)	5.956	0.051
Upto class 12	30 (54.5)	25 (45.5)		
Bachelor	26 (61.9)	16 (38.1)		
Occupation				
Business	35 (51.5)	33 (48.5)	28.050	0.0001
Farmer	22 (31.4)	48 (68.6)		
Foreign	4 (50.0)	4 (50.0)		
Job	25 (65.8)	13 (34.2)		
Ex-army	8 (61.5)	5 (38.2)		
Others	55 (29.4)	132 (70.6)		
Diagnosed with diabetes				
Less than 5 years	75 (47.2)	84 (52.8)	10.860	0.004
6-10 years	44 (38.3)	71 (61.7)		
More than 10 years	30 (27.3)	80 (72.7)		
Clinical visit				
1-3 times	59 (33.9)	115 (66.1)	16.673	0.001
4-6 times	55 (35.7)	99 (64.1)		
7-9 times	22 (57.9)	16 (42.1)		
10-12 times	13 (72.2)	5 (27.8)		

Significance level at p< 0.05

DISCUSSION

The findings of the study showed that 13.3%, 24.0%, 8.6% and 15.9%, of the respondents had knowledge that diabetes can reduce the blood flow to the foot, diabetic patients probably suffer from a lack of sensation in the foot, diabetic patient can get gangrene in the foot and smoking reduces blood flow to the foot respectively. The findings are not consistent with the study[11] which shows that 66.7%, 66.6%, 77.5% and 51.4% reported that diabetes can reduce blood flow to the feet, diabetes can suffer from a lack of sensation in the feet, diabetics can get gangrene in the foot and smoking can reduces the blood flow to the foot of diabetic patients respectively. The reason of difference in the findings might be due to difference in educational status of the respondents. In the study (Al Amri) cent percent of the respondents were literate whereas in the present study 55% of the respondents are literate. The finding of the study showed that 80.7% of the respondents had knowledge that regular exercise can help to prevent diabetic foot. The finding is consistent with the study[12] which shows 81.3% of patients acknowledged the importance of exercise in preventing diabetic foot.

The finding of the study showed that 78.7% of the respondents were agreed that diabetic patients required practicing special foot care. The study is consistent with the study[13] which shows 81.5% replied that diabetic patients are required to practicing special foot care.

The finding of the study showed that 11.7% apply moisturizing cream on their foot and toes. The finding is not consistent with the study[14] which shows 64.2% inspect their feet once a day and78.2% put daily moisturizing cream in their feet and toes. The finding of the study showed that 80.2% of the respondents answered they did not walk bare foot. The study is not consistent with the study[15] which shows 60.4% don't walk barefoot. The finding of the study showed that 73.2% of the respondents answered they check shoes before they wear them. The finding is not consistent with the study[16] which shows 61.2% inspect their shoes from inside before wearing. The finding of the study showed that 32.6% of the respondents answered they dry their feet daily. The finding is not consistent with the study[16] which shows 65% dry their feet properly after washing.

The finding of the study showed that 87.5% of the respondents answered they wash their foot daily. The finding is not consistent with the study[17] which shows 72% patient wash their foot daily.

CONCLUSION

On the basis of the findings of the study, it concludes that three fourth of the respondents had inadequate knowledge regarding diabetic foot. Almost cent percent of the respondents had positive attitude towards the diabetic foot care. More than three fifth of the respondents had poor practices regarding diabetic foot care.

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