

A Observational Study of Knowledge, Attitude and Practices of Diabetes Related Foot Care in a Tertiary Care Hospital

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Abstract: Introduction: Diabetes mellitus is a disease known for its multifaceted complications and foot ulceration, which often results in lower extremity amputations which is one of the most common complications associated with the disease. The prevalence of diabetic foot ulcers among outpatient and inpatient diabetics in a rural Indian study was found to be 10.4%.

Materials and Methods: Present study was hospital based cross-sectional study, conducted in the OPD of Medicine department of a tertiary care centre situated in M.G.M Medical College, Jamshedpur, India. Total 123 patients of diabetic foot who had attended OPD of department of surgery from January 2018 to December 2018 were selected for present study by purposive non probability sampling method. Informed written consent was taken from the participants for the interview. Data was collected by pre formed and pretested self administered questionnaire to assess the patient's level of knowledge and practice of foot care measures.

Results: Present study was hospital based cross sectional study in which 123 participants were enrolled. Out of 123 patients, 66 (54%) patients belonged to the age group 51-70 years, 31 (32.52%) patients were from the age group 31-50 years and 16 (13%) patients were 71 years and above age group. Among them, 89 (72.35%) patients were male and 34 (27.64%) patients were female. Total 55 (53.4 %) participants had diabetes for more than 10 years, 27 (26.2%) patients had diabetes for 5-10 years and 21 (20.4%) were suffering from DM for less than 5 years duration. 74 (71.8%) participants had diabetic foot problem first time, while rest of the 29 (28.2%) participants had diabetic foot problem second or more time.

Conclusion: Present study infers, overall, there prevails poor knowledge and poor practice of diabetic foot care among the patients of diabetic foot. Which can be explained as a major culprit for the progression of diabetic foot to DFU and lately it may end with amputation of the limb. It can be stressed at this point that, by giving proper education, we can improve the knowledge and practice of the patients for the care of their feet and thereby improve the prognosis of the diabetic foot. This may reduce the morbidity and loss of limb in diabetic patients and that in its turn can save our resources.

Key Words: Diabetes mellitus, DFU, questionnaire, knowledge and practice

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I. Introduction

Currently, there are an estimated 366 million people affected with diabetes mellitus globally and India is estimated to have 61.3 million diabetics, which is projected to cross 100 million by the year 2030.

Diabetes mellitus is a disease known for its multifaceted complications and foot ulceration, which often results in lower extremity amputations which is one of the most common complications associated with the disease. The prevalence of diabetic foot ulcers among outpatient and inpatient diabetics in a rural Indian study was found to be 10.4%. Diabetic foot ulcers frequently become infected and are a major cause of hospital admissions. They also account for more than half of non-traumatic lower limb amputations in this patient population. It has been shown that 49-85% of all diabetic foot related problems are preventable if appropriate measures are taken and can be achieved through a combination of good foot care, provided by a multidisciplinary diabetes care team, and appropriate education for both, people with diabetes and healthcare professionals. All patients with diabetes are potentially at risk of diabetic foot,

which can only be avoided by creating awareness about the importance of appropriate self-care. Preventive and prophylactic foot care has been advocated to decrease patient morbidity, utilization of expensive resources, as well as the risk for amputations. This includes identification of risk factors, patient education, and intensive podiatric care and has shown to be both cost-effective and cost-saving.

The present study aims to assess the knowledge, attitude, and practice of diabetic patients as regards care of their own feet.

II. Materials And Methods

Present study was hospital based cross-sectional study, conducted in the OPD of Medicine department of a tertiary care centre situated in M.G.M Medical College, Jamshedpur, India. Total 123 patients of diabetic foot who had attended OPD of department of surgery from January 2018 to December 2018 were selected for present study by purposive non probability sampling method. Informed written consent was taken from the participants for the interview. Data was collected by pre formed and pretested self administered questionnaire to assess the patient's level of knowledge and practice of foot care measures.

Twenty questions for knowledge of foot care and 14 questions for current foot care practice were included in the questionnaire and each positive answer was assigned one mark. On the basis of total marks obtained by each patient, score for knowledge and that for current practice for each respondent was determined. Their knowledge and current practice for foot care were classified as good, satisfactory and poor depending upon the score obtained.

For the knowledge, if the score was $\geq 70\%$ (14-20), it was regarded as good, score of 50-69% (13-10) was regarded as satisfactory and that less than 50% (<10) was regarded as poor. For the practice, if score was $\geq 70\%$ (10-14), it was regarded as good, score of 50-69% (9-7) was regarded as satisfactory and anything less than 50% (<7) was regarded as poor. Above classification was made by using the score used by O. O. Desalu et al. in their study.¹⁹ Data entry and analysis was done in software Epi info version 7.0. Frequency distribution of the variables was performed to describe the data and cross-tabulation was conducted to compare variables. Chi square test was used to find statistical significance. $p < 0.05$ was considered to be statistical significance.

III. Results

Present study was hospital based cross sectional study in which 123 participants were enrolled. Out of 123 patients, 66 (54%) patients belonged to the age group 51-70 years, 31 (32.52%) patients were from the age group 31-50 years and 16 (13%) patients were 71 years and above age group. Among them, 89 (72.35%) patients were male and 34 (27.64%) patients were female. Total 55 (53.4 %) participants had diabetes for more than 10 years, 27 (26.2%) patients had diabetes for 5-10 years and 21 (20.4%) were suffering from DM for less than 5 years duration. 74 (71.8%) participants had diabetic foot problem first time, while rest of the 29 (28.2%) participants had diabetic foot problem second or more time.

Variable	Yes (N=123)
Regular use of anti-diabetic for prevention of complication	95(77.23)
Is sitting with legs crossed or standing for longer time harmful for you?	27(21.95)
Do you aware that foot should be checked every night?	100(81.30)
Which part of the foot should be checked?	92(74.79)
What should be looked for in foot?	82(66.66)
How legs can be cleaned?	88(71.54)
When legs can be cleaned?	89(72.35)
Before cleaning the legs, should the temperature of water be checked or not and how?	43(34.95)
After washing the leg, should it be pat dried or not?	62(50.40)
If you feel skin is dry and rough, should lotion or cream be applied on it or not?	72(58.53)
Should antiseptic solution be applied on the foot?	76(61.78)
Is walking bare foot harmful for you?	97(78.86)
Is application of hot pad or hot water bottle on your foot harmful for you?	62(50.40)
Is removal of a callus or a wart by yourself harmful for you?	51(41.46)
Do you know how to cut toe nails?	53(43.08)
Do you know the symptoms of foot problems?	62(50.40)
What should be done if you find any foot problem?	57(46.34)
Do you know the correct size and type of footwear for you?	26(21.13)
Do you inspect the inside of your footwear for objects or torn lining?	48(39.02)
Does smoking aggravate foot problem?	24(19.51)

Table 1: Knowledge of the respondents about foot care

Variable	Yes (N=123)
Do you take anti-diabetic drugs regularly?	87(70.73)
Do you check your legs every night?	64(52.03)
Do you clean your legs daily?	58(47.15)
Do you check for temperature of the water before cleaning your feet?	50(40.65)
Do you pat dry your legs after washing them?	49(39.83)
Do you apply lotion or cream on the skin of your feet, if you feel it to be dry and rough?	58(47.15)
Do you use any antiseptic solution on the feet?	56(45.52)
Do you avoid walking bare foot?	89(72.35)
Do you avoid application of hot pad or hot water bottle on your feet?	14(11.38)
Do you avoid removal of a callus or a wart by yourself at home?	12(9.75)

Do you cut toe nails straight?	36(29.26)
Do you wear comfortable shoes?	49(39.83)
Do you inspect the inside of your footwear for objects or torn lining?	51(41.46)
For this foot problem have you consulted doctor immediately?	54(43.90)

Table 2: Practice of the respondents for foot care

Variable	Knowledge	Practice
Poor	33(26.82)	59(47.96)
Satisfactory	57(46.34)	43(34.95)
Good	33(26.82)	21(17.07)

Table 3: Distribution of the respondents according to the level of knowledge and practice

Demographic variable	Level of Knowledge		
	Poor (35)	Satisfactory (56)	Good (32)
Age			
30-49	05(14.28)	24(42.85)	11(34.375)
50-69	24(68.57)	29(51.78)	14(43.75)
70 and above	06(17.14)	03(5.35)	7(21.875)
Sex			
Male	26 (74.28)	42(75)	21(37.5)
Female	9(25.714)	14(25)	11(19.64)
Duration of diabetes			
Less than 5 years	10(28.57)	9(16.07)	11(34.375)
5-10 years	21(60)	13(23.214)	07(21.875)
More than 10 years	4(11.42)	34(60.71)	14(43.75)
Frequency of DF			
First time	16(45.714)	43(76.78)	21(80.76)
More than first time	19(54.28)	13(23.214)	11(42.30)
Demographic variable	Level of Knowledge		
	Poor (57)	Satisfactory (40)	Good (26)
Age			
30-49	08(14.03)	21(52.5)	11(42.30)
50-69	42(73.68)	15(37.5)	5(19.23)
70 and above	7(12.280)	4(10)	10(38.46)
Sex			
Male	38(66.66)	29(72.5)	15(57.69)
Female	19(33.33)	11(27.5)	11(42.30)
Duration of diabetes			
Less than 5 years	6(10.52)	13(32.5)	11(42.30)
5-10 years	21(36.84)	15(37.5)	09(34.61)
More than 10 years	30(53.63)	12(30)	06(23.07)
Frequency of DF			
First time	32(56.14)	32(80)	15(57.69)
More than first time	25(43.85)	08(20)	11(42.30)

Table 4: Association of demographic variable with the level of knowledge and of practice

Table 4 shows, age of the respondents did not have any association with the knowledge, but it had highly significant association with the practice for foot care as majority of the respondents in the age group 50-69 years had poor practice score for foot care. Duration of the diabetes of the respondents had significant statistical association with knowledge (p value <0.01) and practices

(p-value <0.01) regarding foot care. Same way frequency of Diabetic foot had significant statistical association with knowledge (p value <0.001) and practices (p value <0.001) regarding foot care. Sex of the respondents did not have any association for both knowledge and practice of foot care.

IV. Discussion

It was also observed that there was a predominance of women regarding knowledge and practice of foot care in relation to men, which could be explained by the fact that women are more concerned with health, had a greater perception of the disease and used the health service more often. This finding is not considered a new fact and is in line with other studies on similar topics.

With regard to gender and knowledge, attitude and practices of people with diabetes mellitus to prevent diabetic foot ulcer, females were more engaged with foot care by using correct hygiene, inspecting foot, nail cutting and types of footwear used. The use of customized shoes reduced the development of new foot ulcers from 58% to 28% over one year of follow-up in a report.

Females were taking more care about their feet by using moisturizer and oils as compared to males, but statistically not significant (p=0.131). Sex has shown no relationship regarding knowledge and practices of foot care [2]. But in a study conducted in India, it was shown that low scores for foot care knowledge were more

common in women (78.5%) than in men (62.5%) [11]. Whereas in another study, multivariate analysis showed that age, years of schooling and sex were an independent determinant of the knowledge score in the respondents with type 2 Diabetes.

In our study, most of the patients were having poor knowledge in foot care practices and this view was also supported by the Nigerian and Pakistani studies where one-third to half of the patients were found to have poor foot care practices. One of the most common reasons for neglect in foot care practice was that most of the patients were illiterate and with low education. Similar findings were seen in Iranian and Pakistani studies. The association between low educational status as well as low diabetes awareness level was found with the poor practice of diabetic foot care, similar to another Pakistan study. This suggests that education determines knowledge, awareness as well as the practice of foot care by diabetic patient.

V. Conclusion

Present study infers, overall, there prevails poor knowledge and poor practice of diabetic foot care among the patients of diabetic foot. Which can be explained as a major culprit for the progression of diabetic foot to DFU and lately it may end with amputation of the limb. It can be stressed at this point that, by giving proper education, we can improve the knowledge and practice of the patients for the care of their feet and thereby improve the prognosis of the diabetic foot. This may reduce the morbidity and loss of limb in diabetic patients and that in its turn can save our resources.

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