Section: Community Medicine

Original Research Article

STUDY ON FOOTCARE PRACTICES AMONG DIABETIC PATIENTS IN A TERITARY CARE INSTITUTE: A CROSS- SECTIONAL STUDY

Pramodh Reddy Parupally[1], Ritika Verma[2], B. Pavani[3]

[1]*Assistant Professor, Department of Community Medicine, Ayaan Institute of Medical Sciences, Hyderabad, Telangana, India.*
[2,3]*Assistant professor, Department of Community Medicine, Osmania Medical College, Hyderabad, Telangana, India.*

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Corresponding Author:
Dr. Pramodh Reddy Parupally,
Assistant Professor, Department of Community Medicine, Ayaan Institute of Medical Sciences, Hyderabad, Telangana, India.
Email: pramodhreddy.p@gmail.com

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ABSTRACT

Background: Diabetes mellitus is associated with several lower-extremity complications, including peripheral neuropathy, peripheral arterial disease, foot deformities, ulceration, and lower-limb amputation. These complications contribute significantly to morbidity, reduced quality of life, and increased healthcare costs. Appropriate foot self-care practices are essential for preventing diabetic foot complications and improving patient outcomes. **Aim**: To assess the pattern of foot self-care practices among diabetic patients.

Materials and Methods: A community-based cross-sectional study was conducted among 462 diabetic patients. Data were collected using a structured, pre-tested questionnaire. Foot care practices assessed included foot washing, drying between toes, footwear use inside the house, use of special footwear, shoe inspection, regular foot examination, and healthcare-seeking behavior. Data were analyzed using IBM SPSS version 27.0. Associations were assessed using the Chi-square test, with $p<0.05$ considered statistically significant.

Results: Among the 462 participants, 456 (98.7%) reported washing their feet daily. However, 453 (98.1%) did not dry the skin between their toes after washing. Footwear use inside the house was reported by only 1 (0.2%) participant, while 461 (99.8%) did not follow this practice. Similarly, only 1 (0.2%) participant used special footwear. Inspection of the inside of shoes was practiced by only 6 (1.3%) participants, whereas 456 (98.7%) did not perform this activity. Regular foot examination was practiced by only 2 (0.4%) participants, while 457 (98.9%) did not perform routine foot checks. Most participants, 451 (97.6%), sought treatment from tertiary healthcare facilities.

Conclusions: Although daily foot washing was widely practiced, adherence to other essential diabetic foot self-care measures was extremely poor, highlighting the need for targeted patient education and awareness programs.

Keywords: Diabetes mellitus, Foot care, Self- care.

INTRODUCTION

An Egyptian was given the first confirmation of diabetes by the name Papyrus Ebers (1500 BC). The word “Diabetes” is origin from Greek word which means “to run through” or a term “siphon” was first used by Aretaeus of Cappadocia in 2 century A.D.[1] In the 5 century B.C. Charaka and Susruta described a situation “Madhumeha” in which a person passes urine, which contain honey, so that it strongly attracts ants.[2] Diabetes mellitus(DM) is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin.[3] the American diabetes Association(ADA) clinically categorized DM as Type I diabetes, Type II diabetes, Gestational diabetes mellitus and other specific types of diabetes due to other causes such as genetic defects in b-cell function, genetic defects in insulin action, diseases of the exocrine pancreas.[4] According to the 6th edition of the international diabetes federation (IDF) Diabetes Atlas 2013, there are an estimated 382 million people with diabetes and the number of people to rise beyond 592 million in less than 25 years worldwide if uncontrolled.[5]

Besides morbidities and increased health care expenditures, diabetes is related to many catastrophic

life-threatening complications such as coronary heart disease, stroke, diabetic foot, and chronic renal failure. Often, people become aware of their diabetic status for the first time after developing complications related to diabetes.[6]

However, through good self-practice, people with diabetes can delay the onset and reduce the development of complication that leads to a prolonged hospital admission and reduces their quality of life.[7]

In line with the increasing prevalence of non-communicable disease especially diabetes, WHO encourages low- and middle-income countries to take on and provide support for the adoption of effective measures for the surveillance, develop a mechanism for the prevention and control of diabetes and its complications, through a primary health care approach.[8]

Various studies in India,[9,10,11,12,13] done on self-care practices in diabetes observed that proportion of diabetes subjects adopting healthy practices such as diabetic diet, regular physical activity, good compliance to regular glucose monitoring and regular medication use, foot care practices is low which varies from 4% for foot care practices and 95% for regular medication use. Hence the finding of the study provides and fills the information gap related with the level of self-care practice.

Aim: To study the Foot care practices among diabetic patients.

Objectives: To study and assess the foot care practices among diabetic patients.

MATERIALS AND METHODS

It is a community based cross sectional study was conducted among 462 subjects who were present during the study period and provided informed consent were included, while those unwilling to participate or with incomplete responses were excluded. A convenience sampling method was adopted, wherein all subjects available during the data collection period was approached until the required sample size was achieved. The sample size was calculated using the formula 4pq/L2 of 400 was calculated considering a prevalence of 50% and a relative precision of 10% considering a non-response rate of 10%, the total sample size came out to be 440 study subjects which will be rounded up to 450. the final sample size was increased to 462 participants. Data were collected using a structured, pre-tested, self-administered questionnaire. Prior to data collection, institutional ethical clearance was obtained from the respective college, and informed consent was taken from all participants. Confidentiality and anonymity were ensured throughout the study. Data were entered into Microsoft Excel and analysed using IBM SPSS software version 27.0. Descriptive statistics were expressed as frequencies and percentages with 95% confidence intervals.

RESULTS

A total of 462 Subjects participated in the study. As shown in Table 1, Majority of the participants (33.1%) were in the age group of 60-69 years. Maximum participants among males (32.1%) and females (34.6%) were also from the same age group. The mean age (± 1 SD) of the study population was 57.5 (±10.64) years. In males the mean age was 55.6 (± 10.95) and in females the mean age was 53.84 (±10.35) years.

Table2, total subjects 462 were involved of these 456(98.7%) subjects have washed their feet daily as a part of traditional practices, followed by 5(1.1%) subjects who haven't washed their feet in the last 7 days.

Table 3. total subjects 462 were involved of these 453(98.1%) haven't been practicing the self-care activity followed by 2(0.4%) who is performing the activity for 5 days followed by 4(0.9%) who is performing the activity for 3 days.

Table 4, subjects who are performing Foot wear practices 1(0.2%) and followed by 461(99.8%) where not performing this activity and subjects involved in using special Footwear is 462 of this only 1(0.2%) subject is performing the special Footwear practices and the other subjects 461(99.8%) isn't performing the special Footwear practices. subjects 462 involved of them only 3(0.6%) is performing the inspection inside of their shoes in the last 7 days practice for 7 days followed by 3(0.6%) more subjects performing the practice, maximum subjects 456(98.7%) isn't performing the activity. The subjects who are not performing the practice of using socks with foot wear is in maximum subjects 462(100%).

Table 5, total subjects 462 out of them the only 2 (0.4%) subjects are practicing for 7 days for regular feet check-ups followed by 3 subjects (0.6%) where trying to practice the self-care activity and highest subjects 457(98.9%) won't be able to follow the self-care practices

Table 6, total subjects are 462 of which 451(97.6%) subjects will be going to tertiary care institute and the least subjects 11(2.4%) where going to traditional doctors.

Table 1: Age and sex wise distribution of study subjects (N=462)

Gender	Males		Females		Total	
Age in years	No	%	No.	%	No.	%
30-39	16	5.8	10	5.4	26	5.6
40-49	52	18.8	33	17.8	85	18.4
50-59	60	21.7	42	22.7	102	22.1
60-69	89	32.1	64	34.6	153	33.1

70-79	44	5.8	28	15.1	72	15.6
≥80	16	5.8	8	4.3	24	5.2
Total	277	100	185	100	462	100

Table 2: Distribution of number of subjects according to number of days they have washed their feet in the last 7 days (n=462)

Washed feet in last 7days	Frequency	Percentage (%)
0 days	5	1.1
6 days	1	0.2
7 days	456	98.7
Total	462	100

Table 3: Distribution of number of subjects according to number of days they have dried the skin between their toes after washing in the last 7 days (n=462)

Dried skin b/w the toes after washing in last 7 days	Frequency	Percentage (%)
0 days	453	98.1
2 days	3	0.6
3 days	4	0.9
5 days	2	0.4
Total	462	100

Table 4: Distribution of number of subjects according to use of foot wear inside house and Special Footwear (n=462)

Use foot wear inside home	Frequency	Percentage (%)
Yes	01	0.2
No	461	99.8
Total	462	100
Use of special foot wear		
Yes	01	0.2
No	461	99.8
Total	462	100
No. of days they have inspected shoes in the last 7 days		
0 days	456	98.7
2 days	03	0.6
7 days	03	0.6
Total	462	100
Use of socks with foot wear		
Yes	Nil	Nil
No	462	100
Total	462	100

Table 5: Distribution of number of subjects according to number of days they have soaked their feet in the last 7 days (n=462)

No. of days they have soaked their feet in last 7 days	Frequency	Percentage (%)
0 days	457	98.9
3 days	03	0.6
7 days	02	0.4
Total	462	100

Table 6: Distribution of number of subjects according to the place of treatment for the complications on the feet (n=462)

Place of treatment for the complications on the feet	Frequency	Percentage (%)
Traditional Doctor	11	2.4
Tertiary Care Institute	451	97.6
Total	462	100

DISCUSSION

Total subjects 462 of their age and sex wise distribution (table 1) of them majority of the participants (33.1%) were in the age group of 60-69 years. Maximum participants among males (32.1%) and females (34.6%) were also from the same age group. Similar results were observed in other studies, Karam Padma et al,[1] a total of 117 diabetic patients consented and participated in the study of whom 63 (53.85%) were male and 54 (46. 15%) female. Age ranged from 34 years to 66 years in the sample with majority of the respondents (45.30%) between the age of 41-50 years, similar studies were begin conducted by priyanka et al. and shah et al.[2,3] Distribution of study subjects based on the foot care practices has shown that out of a total of 462 subjects, 456(98.7%) have washed their feet in last 7 days followed by 5(1.1%)subjects who haven't washed their feet in the last 7 days.453 (98.1%) subjects haven't been drying the skin in between the toes after washing the feet followed by 4 (0.9%) participants who have been practicing the activity of drying the skin toe after washing in last 7 days.

Out of 461 participants who were not wearing foot wear/special foot wear inside the house, 456

participants were not doing the inspection of the shoes as a regular practice and only 3(0.6%) subjects were doing the practice.

Out of 462 subjects who are not having the practice of wearing the socks with the foot wear, only 457(98.9%) participants were not doing the practice of soaking the feet in last 7 days, followed by 3(0.6%) subjects who were doing the practice of soaking the feet for last 7 days.

The preferred place of treatment for the management of complications of the feet was private hospital (256,55.4%) followed by government health facilities (195,42.2%). Faraja S et al,[14] observed that among a total of 404 patients ,15 % had foot ulcers, 44 % had peripheral neuropathy, and 15 % had peripheral vascular disease. In multivariate analysis, peripheral neuropathy and insulin treatment were significantly associated with presence of foot ulcer. Among the 404 patients, 48 % had received advice on foot care, and 27.5 % had their feet examined by a doctor at least once since their initial diagnosis. Foot self-care was significantly higher in patients who had received advice on foot care and in those whose feet had been examined by a doctor at least once.

Natalia de Sá Policarpo et al,[15] observed that among the total of 85 interviewees, 62.4% were women between the age of 25 and 87 years, 45.9% were married, 55.3% were retired and 71.8% had a family income of up to two minimum wages. In relation to nail care, 56.5% did not know how to cut their nails correctly. In relation to care to prevent chronic foot complications 100% stated washing; 64.7% drying every time; 43.5% moisturizing; and 34.1% massaging feet. In terms of the most frequently used footwear, 87.1% used open sandals; and more than half stated they always inspected their footwear before use (54.1%). When asked about the habit of cutting their nails, 91.8% of the study subjects answered positively, cutting in a rounded format (75.6%) using pointed-tip scissors (46.2%). In relation to attitude, 46 women answered they would perform self-care. Thus, women showed they were more willing to include self-care practices in their routine (p=0.044).

CONCLUSION

In the study it was observed that among the total participants of 462, 456(98.7%) subjects were washing their feet regularly ,453(98.1%) subjects were not drying their feet , 461(99.8%) respondents were not using foot wear inside the house, 461(99.8%) subjects were not using a special foot wear and 456(98.7%) respondents were not doing any inspection of their shoes in the last 7 days. Using of socks with foot wear was not practiced by all the participants.

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