

A Descriptive Cross-Sectional Study To Assess The Knowledge And Practices Of Foot Care In Patients With Diabetes Mellitus Attending Diabetic Opd At Selected Hospital In Navi Mumbai.

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“True prevention is not waiting for bad things to happen, it’s preventing things from happening in the first place” - Don Mc Pherson

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. The most common is type 2 diabetes, usually in adults, which occurs when the body becomes resistant to insulin or doesn't make enough insulin. In the past three decades the prevalence of type 2 diabetes has risen dramatically in countries of all income levels. Type 1 diabetes, once known as juvenile diabetes or insulin-dependent diabetes, is a chronic condition in which the pancreas produces little or no insulin by itself. For people living with diabetes, access to affordable treatment, including insulin, is critical to their survival. There is a globally agreed target to halt the rise in diabetes and obesity by 2025. About 422 million people worldwide have diabetes, the majority living 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.

Diabetes mellitus is a global increase health problem. According to WHO report globally the number of increase individual projected to rise 366 million in the year 2030. India currently has the highest number of individuals with diabetic mellitus and it is projected to increase 79.4 million in the year 2030. India leads the world with largest number of diabetic subjects .Federation, the number of people with diabetes in India currently around 40.9 million is expected to rise to 69.9 million by 2025 unless urgent preventive steps are taken. Diabetic patients are at high risk of developing foot ulcers. But mere diagnosis and treatment is not sufficient to tackle this important public health problem. Awareness in part of the patient and community is imperative. To generate awareness it is essential to find out the existing level of knowledge and relevant practice of this high risk group. Although there is a large amount of literatures on diabetic foot care and it's importance, there are limited published data on knowledge and practices of foot care among diabetic patients in India, specifically in West Bengal.

NEED OF THE STUDY

Diabetic foot syndrome is one of the common and most devastating preventable complications of diabetes mellitus (DM). It is associated with morbidity and premature mortality due to long-term complications affecting foot. The American Diabetes Association recommends that people with diabetes should have a comprehensive foot examination once

per year. Most of the foot problems can be prevented with careful foot care. It may take effort and time to build up good foot care habits, but self-care is essential.

In addition to causing pain and morbidity, foot lesions in diabetic patients also have substantial economic consequences, beside the direct costs of foot complications, there are also indirect costs relating to loss of productivity, individual patients' and family costs and loss of health related quality of life. The lifetime risk of a person with diabetes developing a foot ulcer could be as high as 25%, and it is believed that every 30 seconds a lower limb is lost somewhere in the world as a consequence of diabetes. Globally, DM foot lesion is a result of peripheral vascular disease and neuropathy which is the major contributing factor that is preventable in most cases in developing countries.

1. A cross-sectional study was conducted by Yahya M. Solana, Hala M. in October 2013 to determine the knowledge and practice of foot care among diabetes patients attending the Diabetic Center in Jazan Region, Saudi Arabia. Pre-tested structured questionnaire was used as study tool. Result of study shown that Eighteen percent of study population reported history of foot ulcer. Almost 53.6% patients had good foot care knowledge. Gender, duration of DM, marital status and age had no significant association with knowledge. Males were more adherent to foot drying by 65.2%, while females are applying more attention to softening of skin by 72.3%. There were no significant differences between males and females regarding foot inspection, nail care, adherence to medication and shoes check. In conclusion, the knowledge and practice of foot care among DM patients in the study participants were not adequate. The result of this study has highlighted the gaps in their knowledge and practice and underscores the urgent need for a patient friendly educational intervention. It is important to activate the role of health education to everyone who has direct contact with the patient, to minimize the DF complications.

2. A cross-sectional study was conducted by O O Desalu, F K Salawu, and A B Olokoba 2009, in three tertiary hospitals in Nigeria to determine the knowledge and practice of foot care among diabetes patients attending three tertiary hospitals in Nigeria. Pre-tested structured questionnaires were administered by medical officers to diabetes patients. The outcome variables were knowledge and practice regarding foot care. The knowledge and practice scores were classified as good if score $\geq 70\%$, satisfactory if score was 50–69% and poor if score was $< 50\%$. Result of study shown that Of 352 diabetes patients, 30.1% had good knowledge and 10.2 % had good practice of DM foot care. Majority (78.4%) of patients with poor practice had poor knowledge of foot care. With regard to knowledge, 68.8% were unaware of the first thing to do when they found redness/bleeding between their toes and 61.4% were unaware of the importance of inspecting the inside of the footwear for objects. Poor foot practices include; 89.2% not receiving advice when they bought footwear and 88.6% failing to get appropriate size footwear. Illiteracy and low socioeconomic status were significantly associated with poor knowledge and practice of foot care. In Conclusion, this study has highlighted the gaps in the knowledge and practice of foot care in DM patients and underscores the need for an educational programme to reduce of diabetic foot complication.

From above studies and other articles, the researcher found that most patient with diabetes had poor knowledge and practices in foot care, so the researcher felt to do a study to assess the knowledge and practices of foot care among patients visiting the diabetic OPD at selected hospital in Navi Mumbai.

PROBLEM STATEMENT

A descriptive cross-sectional study to assess the knowledge and practices of foot care in patients with Diabetes Mellitus attending diabetic OPD at selected hospital in Navi Mumbai.

OBJECTIVES

- 1) To assess the knowledge regarding practices of foot care among diabetic patients attending diabetic opd at selected hospitals in Navi mumbai
- 2) To assess the practices of foot care among diabetic patients attending diabetic opd at selected hospitals in Navi mumbai.
- 3) To find out association between demographic variables and practices of foot care among diabetic patients attending diabetic opd at selected hospital in Navi mumbai.

HYPOTHESIS

H1 – The patients will have knowledge deficit related to practices of foot care in diabetes mellitus.

H2 - The patients practices related to foot care in diabetes mellitus will be inadequate.

H3 - There will be significant association between the demographic variables and practices of foot care.

ASSUMPTIONS

The study assumes that the patients with Diabetes Mellitus may not have adequate knowledge and practices of foot care.

OPERATIONAL DEFINITION

- Descriptive cross- sectional study: In this study it refers to the knowledge and self-care practices related to foot care among the patients
- Assess: In this study, assess means to estimate the knowledge scores and observation of practices of foot care in patients with diabetes mellitus.
- Knowledge: In this study knowledge refers to scores obtained by the patients in the questionnaire on knowledge related to foot care in patients with diabetes mellitus.

Knowledge score was determined based on the proportion of correct answers out of 15 questions. The level of knowledge was assessed good if the score was more than 80 % (12 and above correct answers out of 15). Scores of 70% (7 to 11 correct answers) were categorized as satisfactory knowledge. Scores less than 50% (6 or below correct answers) were evaluated as poor knowledge.

- Practices: In this study practices are process of taking care of oneself with behaviours that promote health and prevent complications due to lack of foot care. A questionnaire was used to assess the practices of foot care.

Score was determined based on proportion of correct answers out of 12 questions. The practices were characterized as good if score was more than 80%(10 and above scores).

Scores of 70% (6 to 9 scores) were categorized as satisfactory practices. Scores less than 50% (5 and below) were evaluated as poor practices.

- Foot care: Routine measures undertaken daily/regularly to maintain the integrity of the skin and toe nails of the foot and footwear and observation of both feet

DELIMITATIONS

The study is delimited to the patients with Diabetes Mellitus attending Diabetic OPD at D.Y PATIL HOSPITAL.

SCOPE OF THE STUDY

This study will help the investigator to find out the knowledge and practices of foot care among patients with diabetes mellitus. This study will help the investigator to provide educational programmers' that will enhance and sustain the good knowledge and practice of foot care and prevent complications.

1) A cross-sectional study was conducted by AR Muhammad-Lutfi, MR Zaraihah, and IM Anuar-Ramdhan in 2013, of in-patient population at Hospital Sultanah Nur Zahirah a tertiary medical center in Kuala Terengganu, Malaysia to assess patients' knowledge and compliance of diabetic foot care. A non-randomized convenient sampling method was performed and an informed consent was obtained from the participants. They were interviewed with a questionnaire of 15 'yes' or 'no' questions on foot care knowledge and practice. Result of study shown that a total of 157 patients were included in this study with a mean age of 56.33 years (31-77). There were 72 male (45.9%) and 85 female (54.1%) patients with the majority of them being Malays (154 patients, 98.1%). Majority of the patients (58%) had poor foot care knowledge while 97 patients (61.8%) had poor diabetic foot care practice as compared to the median score. Based on the chi square test of relatedness, there was no significant association between knowledge and practice with any of the variables. In conclusion, the majority of patients admitted for diabetic foot infections had poor knowledge and practice of diabetic foot care. Education regarding foot care strategies should be emphasized and empowered within the diabetic population.

2) A cross-sectional study was conducted by AlOwais, Mashail Mohammed; Shido, Omer A. in 2018, to assess the knowledge and practice of foot care in patients with diabetes mellitus attending primary care center at Security Forces Hospital, Riyadh, Saudi Arabia. Consecutive sampling was used to enrol 350 diabetic patients. Information on demographics, knowledge and practice of footcare was collected through standardized and pre-tested self-administered questionnaire. Result of this study shown that out of 350 patients aged 18 years and more, 170 (46.7%) belonged to age group of 46-60 years; mostly males (n = 185, 53.9%). The foot complications were absent among 57.9% patients, 35.5% having numbness, 4.3% having a history of healed ulcer and 2.3% reported toe amputation. More than 65% patients were certain about their knowledge regarding foot self-care. There was no statistically significant difference in the knowledge among males and females. The practice of self-care of feet was statistically significantly different among males and females regarding self-inspection of feet on regular basis as well as daily moisturizing of their feet. In conclusion, both knowledge and practice levels were low among diabetic patients which needs to be strengthened through

regular counselling sessions. There is a pressing need to spread awareness on this important aspect of morbidity and mortality which can be addressed with minimal resources.

3) A cross-sectional study was conducted by Bharati Amar Taksande, Mukesh Thote, and U. N. Jajoo in 2011, to analyze the knowledge, attitude, and practice of foot care in patients with DM in central rural India. This study was conducted at a rural educational hospital in central part of India over 200 patients who have Type 1 and Type 2 diabetes. A structured and validated questionnaire was administered to cases. Result of this study shown that out of 200 patients, 184 (92%) had Type 2 DM and 16 (8%) had Type 1 DM. The mean duration of the diabetes was 10.6 ± 8.2 years. Around 82.9% of the patients were aware of the disease and 23.2% were aware of the complications of the DM. In 63% of the patients, foot care examination and education regarding foot complications were not suggested by their treating physicians. Preferred footwear found to be used by 84.5% population was open footwear called chappals with no heel counter and forking of toes by a divider. Significantly, 29 (14.5%) diabetics walked barefoot both outdoors and indoors. Two patients were found to use shoes without socks most of the daytime, and none of the diabetics wore specially designed orthotic shoes. 68 (34%) patients provided history of leg discomfort in the form of tingling numbness, burning, fatigue, and cramping or aching (claudication). Symptoms were located mainly in the feet and calves. Only 7 (3.5%) patients had undergone feet examination by the physician in the past. Those who underwent feet examination were mainly admitted for some or the other causes and underwent examination during that time. None of the patients did self-evaluation of the foot daily. Annual examination of feet by the physician and self-examination were not known facts to the diabetic population. They are unaware of these facts. In conclusion, It is necessary to firstly develop awareness of diabetes mellitus and the related complications, one amongst which is foot care. Certain educational strategies should be established for both the consultant physician and also the common man to create awareness for effective foot care.

4) A cross-sectional study was conducted by Fatemah M Alsaleh, Abdallah Y. Naser in 2018, to assess the Knowledge and practice of foot self-care among patients with diabetes attending primary healthcare centres in Kuwait. Methods- A pre-tested self-administered questionnaire was used as study tool . The questionnaire included questions on demographic characteristics and patients' knowledge and practices of foot care. Result of this study shown that, a total of 357 patients participated in this study, giving a response rate of 87.3%. The overall mean knowledge score of foot care was 12.7 ± 2.7 (equals 81.3%). Most patients ($n = 283$, 79.3%) showed good knowledge. In comparison, less than one-third of patients ($n = 110$, 30.8%) practiced good foot care. The overall mean score of patients' practices was 55.7 ± 9.2 (equals 64.0%). Approximately 17.4% of the patients had a higher risk of developing DPN. University students had lower odds of having good knowledge about foot care. On the other hand, patients who reported having diabetes for a long duration (10 years and above) and patients who did not have any other comorbidities had higher odds of having good foot care knowledge. Patients who were on oral hypoglycaemic agents (OHAs) only had lower odds of practicing good foot care. Patients who reported having diabetes for a duration between 5 to less than 10 years and those who are on a diet only had higher odds of practicing good foot care. Patients who were using combination therapy with OHAs and insulin had a higher risk of developing DPN. On the other hand, patients who reported that they did not have a previous history of foot ulcer had a lower risk of developing DPN. In conclusion, the knowledge of patients with diabetes regarding foot care is rated as good,

while their self-practice is considered satisfactory. To improve the foot care knowledge and self-care practice of patients, healthcare providers (HCPs) need to support patients through educational programmes and appropriate training.

RESEARCH METHODOLOGY

Research approach

A qualitative approach was used in this study

RESEARCH DESIGN

The research design used in this study is a descriptive approach with a cross-sectional study design

POPULATION

“A population is the entire aggregation of cases that meet a designated set of criteria”. In this study the target population is all patients who are having Diabetes Mellitus and are attending diabetic OPD at selected hospital in Navi Mumbai, and are willing to participate.

SAMPLE

“Sampling is a process of selecting representative units of a population for study in research. It is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population”.⁽¹⁴⁾

SAMPLE

SIZE

In this study sample consisted of 30 adult patients with Diabetes Mellitus attending diabetic OPD from the above stated hospital of Navi Mumbai

SAMPLINGTECHNIQUE

In this study the samples were selected by a non-probability convenient sampling technique. The investigator visited the Diabetic OPD twice a week (wednesday and friday) and took a round to check the availability of patients who meet the inclusion criteria.

CRITERIA FOR SAMPLE SELECTION

In the present study the following inclusion, exclusion criteria is set.

Inclusion criteria:

- Patients visiting diabetic OPD during study period
- Those who are willing to participate in the study

Exclusion criteria:

- Not able to read Hindi and/or English

TOOL AND TECHNIQUE

- **Technique**
In this study, Interview technique was used for data collection.
- **Tool**

Based on the study objectives, the tool designated for the study was a questionnaire that consisted of the following:

Section 1 which included 9 questions on biographic data of the respondents,

Section 2 which included 15 questions on the knowledge of footcare of the and

Section 3 which included 12 questions on practices of footcare of the respondents

VALIDITY

To obtain the content validity, the tool was given to total of 08 nursing teachers, nursing experts and medical experts.

After receiving opinion from experts' necessary modifications were done with the consultant of research guide in the tool. There was uniform agreement of the tool which was adopted to conduct the study.

ORGANIZATION OF FINDINGS

The data has been organized and presented in following sections:

Section 1 which included 9 questions on biographic data of the respondents,

Section 2 which included 15 questions on the knowledge of footcare of the and

Section 3 which included 12 questions on practices of footcare of the respondent

DESCRIPTION OF THE KNOWLEDGE REGARDING FOOTCARE IN THE RESPONDENTS

Sr. No.	Risk factor variables	Data				Total	
		Yes		No			
		(n)	(%)	(n)	(%)	(n)	(%)
1	Anti-diabetic medications should be taken regularly to prevent complications.	29	96.6%	01	3.3%	15	100%
2	Feet should be washed daily.	29	96.6%	01	3.3%	15	100%
3	Luke warm water should be used to wash feet.	24	80%	06	20%	15	100%
4	The temperature of the water should be checked before washing feet.	18	60%	12	40%	15	100%
5	Feet should be completely dried after washing.	26	86.6%	04	13.3%	15	100%
6	Talcum powder should be used to keep the areas between the toes dry.	16	53.3%	14	46.6%	15	100%
7	Lotion or moisturizing cream should be applied on the feet to prevent dryness	18	60%	12	40%	15	100%

	of skin.						
8	Lotion should not be applied between the toes.	18	60%	12	40%	15	100%
9	Socks should be changed regularly.	25	83.3%	05	16.6%	15	100%
10	Toenails should be trimmed straight across.	25	83.3%	05	16.6%	15	100%
11	Feet should be inspected at least once a day.	19	63.3%	11	36.6%	15	100%
12	There is particular time to purchase shoe for diabetic patient	18	60%	12	40%	15	100%
13	Diabetic patients should not walk barefoot	23	76.6%	07	07%	15	100%
14	The inside of the shoes should be inspected before wearing them.	26	86.6%	04	13.3%	15	100%
15	Diabetic patients should consult a doctor if their feet have redness, blisters, cuts or wounds.	21	70 %	09	30%	15	100%

KNOWLEDGE SCORES OF SAMPLES

CATEGORY	VERY GOOD	GOOD	AVERAGE	POOR
NO. OF SAMPLES	10	14	06	-

The scores indicates-

12 and above- very good , 9-11 Good , 8-5 Average , 4 and below- Poor

According to the scores, we can interpret that among 30 samples-10 samples comes under the category of Very good, 14 samples have Good scores, 6 samples are with scores between 5-8 i.e average, none of the samples have poor scores. It can be concluded that the sample have some knowledge regarding footcare.

PRACTICES SCORES OF THE SAMPLES

CATEGORY	VERY GOOD	GOOD	AVERAGE	POOR
NO. OF SAMPLES	07	12	03	08

The scores indicate- More than 75% - **Very good**, 65 -74% - **Good**, 55-64% - **Average**, 54% - **below – Poor**

According to the scores we can interpret that, among 30 samples 7 samples comes under the category of very good practices, 2 samples are having good practices 3 samples were having average practices, and 8 samples were having poor practices it can be concluded that the samples have some practices regarding the footcare

SUMMARY

The collected data indicated that patients with diabetes had poor practice and knowledge about foot care. This is basically due to lack of proper communication between patients and medical team and inadequate education. Based on nurses' opinion, recommendations and guidelines play an effective role in prevention, treatment, and reduction of complication among patients with DFU. Therefore, adaptation, implementation, and evaluation of the educational programs were recommended. According to the principle of "prevention is better than cure" and considering the predictive factors in the current study including poor knowledge and practices, more attention should be paid to patients possessing risk factors.

Knowledge and practice toward foot care were poor in most patients with diabetes. There was a significant relationship between some demographic characteristics of patients and knowledge and practice toward foot care.

CONCLUSION

The present study assessed the knowledge and practices of foot care among diabetic patients attending diabetic opd at selected hospitals in Navi mumbai. This study concludes that adequate knowledge and good practices are important to effectively control diabetes mellitus. Patients require continuous support of family members and community in order to modify their lifestyle and behaviors and make sustainable changes in order to better control their diabetes disease. Also, education about diabetes mellitus and its risk factors should be provided through mass media in order to effectively control it in the community

RECOMMENDATIONS

- A similar study can be replicated on a larger sample. It may help to obtain significant data, draw more definite conclusions and make generalizations.
- Education focusing on foot care for patients with diabetes is recommended to prevent complications.
- A structured approach towards patient education can be incorporated by the hospitals for enhanced role of nurses for the same.

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