Knowledge Related to Diabetes Mellitus and Self Care Practice Related to Diabetic Foot Care among Diabetic Patients

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ABSTRACT

Background: Diabetes mellitus is defined as a group of metabolic diseases characterized by high glucose level that result from defects in the body's ability to produce or use insulin. Knowledge related to diabetes and self-care practice related to diabetic foot care among diabetic patients is important in the prevention of complications of diabetes mellitus.

Objectives: To assess the knowledge about diabetes and self-care practice related to diabetic foot care among diabetic patients at Government Doon Medical College and Hospital, Dehradun, Uttarakhand in a view to provide an information booklet.

Methodology: A quantitative research approach with descriptive design was used to assess the knowledge related to diabetes mellitus and self-care practice related to diabetic foot care among 60 patients who were having history of diabetes mellitus from past 3 years. The study was conducted for a period of one week. The self-structured questionnaire was used to assess knowledge and self-structured foot care checklist to assess the practice.

Result: The mean age of study participants was 54±11.7. The result of present study reveals that most of the subjects (48.33%) had good knowledge, some subjects (45%) had average knowledge and rest of the subjects (5% and 1.66%) had poor and excellent knowledge. Most of the subjects (29% and 28%) had good and excellent practice. Rest of the subjects (3%) had poor practice. A strong positive correlation (r=0.93) was found between knowledge and practice regarding diabetes mellitus at p value ≤ 0.001.

Conclusion: These findings highlight the need to have a good knowledge on diabetes and self-care practice of the foot.

KEYWORDS: *Knowledge, Diabetes, Self-care practice*

INTRODUCTION

Diabetes is a common disease, and it affects different age groups of people across the world.[1] According to WHO (September 2022), Diabetes has entered the top 10 causes of death, following a significant percentage increase of 70% since 2000.[2] The Lancet report published on June 24, 2023 reveals that, more than 1.31 billion people could be living with diabetes by 2050 worldwide.[3] According to the International diabetes federation 2021, the total number of people living with diabetes is projected to rise to 643 million by 2030 and 783 million by 2045.[4] According to the data from NCBI, 10thMay 2022, the annual incidence of diabetes foot ulcers worldwide is between 9.1 to 26.1 million.[5]

In India, there are estimated 77 million people above the age of 18 years are suffering from diabetes (type 2) and nearly 25 million are pre diabetics. More than 50% of people are unaware of their diabetic status which leads to health complications if not detected and treated early.[6] In 2011, Uttarakhand had recorded 19,308 diabetes patients while the number stood at 39,188 in 2015. Out of 39,188 diabetes patients in the state, 4,228 were type 1 diabetes patients while 34,960 patients were suffering from type 2 diabetes.

Experts said that Uttarakhand is registering arise in diabetes cases because of rapid urbanization which has led to change in lifestyle.[7]

A small survey was conducted for two months (April and May 2022) revealed that total of 33 patients with diabetes mellitus were reported at IPD of GDMC. Approximately 50-70 patients who were having diabetes in the last three years were reported at OPD's of GDMC per day. Based on all these data, it was decided to conduct research on diabetes mellitus and provide knowledge to people suffering from diabetes for creating awareness and to prevent further complication.

Material and methods: The present study was a descriptive research which has been conducted in Government Doon Medical College and Hospital (GDMCH), Dehradun, Uttarakhand during February 2023. Ethical permission was taken. The population under study was constituted of all the patients of OPD and IPD who were having history of diabetes mellitus from past three years. Exclusion criteria for this study were Patients who were critically ill and OPD Patients who had shortage of time.

Tool/Instrument:

Data were collected using Personal and Socio Demographic detail, Self-structured knowledge Questionnaire and Self structured Foot Care Practice checklist.

Personal and Socio Demographic detail

It includes Age (years), Education, Gender, Income (per month), Occupation, Co-morbid illness, Previous knowledge regarding diabetes mellitus and history of substance abuse.

Self-structured knowledge Questionnaire

This tool was developed by investigator to assess the Knowledge related to different aspects of diabetes mellitus. Each parameter was awarded 1 mark for the correct answer and 0 mark if the answer is wrong. Thus, the total marks for the questions related to knowledge were 16. Those who scored between 0-4 were considered having poor knowledge, between 5-8 were considered having average knowledge, between 9-12 were considered having good knowledge and those who scored between 13-16 were considered having excellent knowledge.

Self structured Foot Care Practice checklist

This tool consists of 12 items to assess whether the patients were taking care of their foot or not. In this scale the maximum and minimum score were 24 and 1, respectively. A score of 17-24, indicates excellent foot care practice, 9 – 16, indicates good practice and below 8 indicates poor foot care practice.

Statistical Analysis

The data were presented as mean ± standard deviation. Karl Pearson coefficient was used to find out the relationship between knowledge and foot care practice. Statistical significance was accepted when $p < 0.05$.

Results

The study included a total of 60 diabetic patients with age ranging from 25 and 85 years. The mean age of study participants were 54.6 ± 11.7. The frequency and percentage distribution of study subjects is shown in Table No.1.

Table No. 1: Frequency and percentage distribution of socio demographic variables of subjects.

N=60

S. No.	Demographic variables	Categories	Frequency (f)	Percentage (%)
1	Age	25-55	30	50.0
		56-85	30	50.0
2	Gender	Male	22	36.6
		Female	38	63.3
3	Education	Primary education	14	23.3
		Secondary education	7	11.6
		Senior secondary education	15	25
		Graduate and more	3	5
		Illiterate	21	35
4	Occupation	Government job	7	11.6
		Private job	8	13.3
		Unemployed	36	60
		Self employed	9	15
5	Co morbid illness	No	38	63.3
		Yes	22	36.6

6	Substance use	No	49	81.6
		Yes	11	18.3
7	Previous source of knowledge	No	15	25
		Yes	45	75

In terms of knowledge regarding diabetes mellitus, most of subjects (48.33%) had good knowledge, (45%) had average knowledge, and rest of the subjects i.e., (5%) and (1.66%) had poor knowledge and excellent knowledge respectively (Table No.2). Most of the subjects had good (46.66%) and excellent foot care practice (48.33%) and rest of the subjects (5%) had poor foot care practice (Table No.3). A strong positive co-relation was found between knowledge and practice with r = 0.93 and p = 0.05 (Fig.No.1)

**TableNo.2: Frequency and percentage distribution of knowledge score regarding diabetes mellitus.**

N=60

S. No	Knowledge score	Frequency (f)	Percentage (%)	Mean±SD
1.	Poor knowledge	3	5	
2.	Average knowledge	27	45	8.36±2.47
3.	Good knowledge	29	48.33	
4.	Excellent knowledge	1	1.66	

Table No.3: Frequency and percentage distribution of Foot care practice score.

N=60

S. No	Practice score	Frequency (f)	Percentage (%)	Mean±SD
1.	Poor practice	3	5	
2.	Good practice	28	46.66	15.94±4.16
3.	Excellent practice	29	48.33	

Fig.No.1: Linear co-relation between knowledge related to diabetes mellitus and foot care practice

PRACTICE

◆ Correlation between knowledge and practice   y=0.5299x+10.818 Li

——   R² = 0.1396
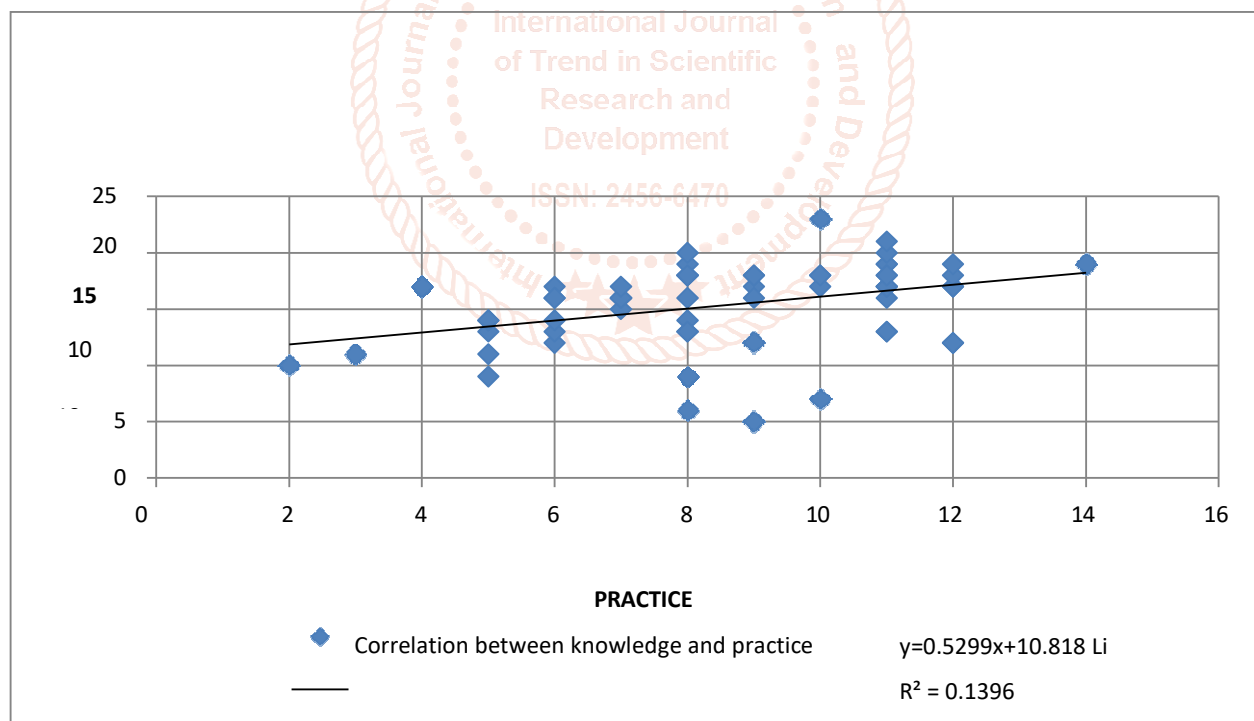
Discussion

The results of present studies shows that maximum number of diabetic patients (48.33%) had good knowledge 45% had scored average knowledge, 5% diabetic patients had poor knowledge a related to diabetes. A cross sectional study was conducted by Vivek Nagar, Pankaj Prasad, Arun Mitra, Saket Kale, Kriti Yadav and Mukesh Shukla in medicine outpatient department of tertiary care hospital of Bhopal to assess the knowledge about diabetes. The findings of the study shows that majority 57 of the diabetic patients (49.3%) had moderate knowledge, 34.6% diabetic patients had poor knowledge and 16% diabetic patients had poor knowledge. Inadequate knowledge regarding disease etiology, symptoms and

complications etc. indicate gaps in adequate patient counselling practice by health care providers.[8]

In the present study, it was observed that maximum number of diabetic patients (48.33%) had excellent practice, 46.66% diabetic patients had good practice and only 5% diabetic patients had poor practice. A similar descriptive study was done by Thomas T. and Chandrasekaran C. to assess the knowledge and practice of foot care among diabetic clients attending diabetic OPD in Saveetha Medical College and Hospital, Chennai. Out of 100 diabetic patients, 77 patients had poor knowledge while only 23 patients had good knowledge.[9] A quantitative study with one group pre-test and post-test was conducted by Prakash VSK. and Sharma R. of Himalayan College of Nursing, Dehradun on the effectiveness of teaching program regarding foot care management on the knowledge and practice of clients with type 2 diabetes mellitus in Prem Nagar and reported practice checklist on foot care management. Study reveals that mean pre-test knowledge score was 9.8±2.2 and mean pre-test practice score was 8.7±2.12.[10]

LIMITATION
To collect data in hospital setting was difficult as people come to hospital for their treatment and already are in tension and hurry, so they barely spare time to answer the questions.

CONCLUSION
The present study assesses the knowledge related diabetes and selfcare practice related diabetic foot care among patients of OPD and IPD who have history of diabetes mellitus form past 3 years at Government Doon Hospital, Dehradun. The result revealed that majority of people had good knowledge and excellent practice.

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