Walking the Path to Prevention: A Study on Foot Care Knowledge and Self-Efficacy among Diabetics in Trichy

Abirami.K[1], Sarmila.A[2]

[1]Tutor, SRM Trichy College of Nursing, Trichy, Tamil Nadu, India
[2]Professor, SRM Trichy College of Nursing, Trichy, Tamil Nadu, India

Abstract—Introduction:Diabetes mellitus is a prevalent non communicable disease globally, and the death rates related to complications from this condition, including diabetic foot ulcers, are significant. Knowledge of foot care and the ability to manage self-care are essential for individuals, especially those with diabetes, to keep their feet healthy and avoid complications.
Aim:
The aim of this study was to assess the level of knowledge and self-efficacy regarding foot care among diabetic patients.
Methodology:
A descriptive research approach used for this study. A total of 50 diabetic patients were selected using a non-probability purposive sampling technique. Data were collected through a self-structured knowledge questionnaire and a modified attitude scale to evaluate self-efficacy related to foot care.
Results:
Out of 50 samples, 20 (40%) showed appropriate knowledge of foot care, 28 (56%) showed intermediate knowledge, and 2 (4%) indicated inadequate knowledge. self-efficacy regarding foot care among diabetes patients. 17 (34%) of the 50 samples showed appropriate knowledge of foot care, 30 (60%) showed intermediate knowledge, and 3 (6%) indicated inadequate knowledge.
Conclusion:
The study highlights the need for focused educational interventions to enhance diabetic patients' knowledge and self-efficacy regarding foot care. Improving awareness and confidence in self-care practices can contribute to the prevention of foot complications and promote better health outcomes.

Index Terms—Diabetic foot care, diabetes management, knowledge assessment, patient education,self-efficacy

I. BACKGROUND OF THE STUDY

Diabetes mellitus represents a cluster of metabolic disorders characterized by persistent hyperglycemia, resulting from defects in insulin secretion, insulin action, or both. These metabolic abnormalities in carbohydrates, lipids, and proteins are attributed to the critical role of insulin as an anabolic hormone. [1]

Globally, the prevalence of diabetes mellitus ranges from 9.1 to 26.1 million individuals. The title of the "diabetes capital" of the world belongs to India, where more than 75 million individuals are affected by diabetes. Among this population, the incidence of foot ulcers varies between 8% and 17%. Additionally, around 15% to 25% of those with diabetes mellitus are likely to develop a diabetic foot ulcer at some point in their lives. The prevalence of diabetes in India varies across different regions, ranging from 5.3% in the central region to 13.6% in the northern region. [2][3]

In the context of this study, 80% of the cases were reported from rural areas, while the remaining 20% were from urban areas.

It is imperative to maintain good foot care practices, particularly for those with diabetes. By diligently caring for your feet and promptly addressing any issues that arise, you can significantly reduce the risk of developing foot complications. It is advisable to schedule a comprehensive foot examination with a medical professional, such as a physician or a podiatrist, at least annually. This proactive approach will facilitate the early detection of potential problems, thereby preventing more severe complications.[4][5][6]

Educating patients on proper foot care is a crucial preventative measure against foot complications and amputations. Implementing effective foot health practices is essential for reducing the risk of foot ulcers and other complications.

Individuals with insufficient knowledge and practices related to diabetic foot care tend to have a higher occurrence of diabetic foot ulcers, resulting in severe

disability and increased hospitalization rates. The need for a study on diabetic foot care is paramount due to the rising prevalence of diabetes worldwide and its associated complications. Ensuring adequate blood sugar regulation is crucial in preventing the micro complications. Moreover, the implementation of diabetic foot care practices, including regular foot inspections and the use of appropriate footwear, is considered essential for the timely detection and prevention of potential complications.

Diabetic foot care is a crucial aspect of managing diabetes, as individuals with the condition are at an increased risk of developing foot complications. These complications can arise due to neuropathy, poor circulation, and infections, which may lead to severe outcomes if not addressed promptly. Effective diabetic foot care involves regular foot inspections, proper hygiene, and the use of appropriate footwear to prevent injuries and ulcers. Education about recognizing early signs of complications is essential for patients and caregivers. By prioritizing foot health, individuals with diabetes can significantly reduce their risk of serious complications and enhance their overall quality of life.[7][8][9]

II. STATEMENT OF THE PROBLEM

Assess the knowledge and self-efficacy regarding foot care among diabetes patients at selected hospital, Trichy

OBJECTIVES
1. To assess the knowledge regarding foot care among diabetes patient
2. To assess the self-efficacy regarding foot care among diabetes patient
3. To find out the association between level of knowledge and their demographic variables

ASSUMPTION
1. Some diabetic patients may have moderate knowledge and self – efficacy regarding foot care.
2. The increased use of media may increase knowledge regarding foot care

OPERATIONAL DEFINITION
ASSESS:
In this study it refers to way of evaluation of foot care among diabetes patients.
KNOWLEDGE:

In this study it refers to the level of understanding regarding Foot care among diabetes patients which is measured by self-prepared questionnaires and its Scores.

SELF-EFFICACY:
Self-efficacy in foot care refers to an individual's confidence in their ability to perform specific foot care practices effectively to prevent complications related to diabetes which is measured by self-reported surveys to rate their confidence (on a scale of 1 to 10) in performing these tasks.

FOOT CARE:
In this study, Foot care refers to a set of practices aimed at maintaining the health and hygiene of the feet, particularly for individuals with diabetes.

DIABETES PATIENT:
Diabetes patients refer to individuals who have been clinically diagnosed with diabetes mellitus, which includes both Type 1 and Type 2 diabetes.

DELIMITATION:
The research will be limited to a specific time period for data collection, such as a six-month or one-year study duration, which may affect the longitudinal understanding of foot care practices.

III. MATERIALS AND METHODS

RESEARCH APPROACH-:
Quantitative approach
RESEARCH DESIGN:
A descriptive design was done.
RESEARCH SETTING:
The study was adopted at Hospital in Trichy. In this area we selected people who have Diabetes Mellitus.
SAMPLE:
Sample consists of who have diabetes mellitus
SAMPLE SIZE:
Sample size consists of 50 diabetes patients.
SAMPLING TECHNIQUE:
Non probability purposive sampling techniques.
TOOLS:
Section A   : Demographic variable
Section B   :   Structured   knowledge questionnaire
Section C   : Attitude scale to assess the self-efficacy about foot care
Section A- Demographic Variable

It incorporated demographic information about age, gender, education, occupation, history of diabetes mellitus, family history of diabetes mellitus, treatment, and how media might assist people learn about foot care.

Section B – Structured knowledge questionnaire to assess the level of knowledge regarding foot care among diabetes mellitus

It comprises of 20 multiple-choice questions designed to assess diabetic patients' level of foot care knowledge. Every right answer earned one mark, while every incorrect response earned zero. Twenty marks were the total score assigned for this section.

Section C - Attitude scale to assess the self-efficacy about foot care among diabetes mellitus

It comprises of ten attitude questions intended to evaluate diabetes mellitus self-efficacy. Each question has an attitude rating ranging from 0 to 10.

DATA COLLECTION PROCEDURE:

Non-probability purposive methods of selection were researcher to choose the sample for the study, which was conducted at the Trichy SRM Medical College Hospital and Research Centre. Fifty individuals with diabetes were selected for the study. Oral consent was provided to the researcher by the patients who participated in the study. Patients with diabetes were given self-structured questionnaires and a self-efficacy attitude measure by the researcher.

IV. RESULT AND DISCUSSION

TABLE – 1: The frequency and percentage distribution of Diabetic patient's demographic variables.

S.No	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1	Age		
	a. 20-40 years	4	8%
	b. 41-60 years	28	56%
	c. 61-80 years	18	36%
2	Gender		
	a. Male	30	60%
	b. Female	20	40%
3	Education		
	a. Primary	19	38%
	b. Secondary	13	26%
	c. Undergraduate	9	18%
	d. Postgraduate	4	8%
	e. No formal education	5	10%
4	Occupation		
	a. Unskilled labor	21	42%
	b. Government	6	12%
	c. Retired	8	16%
	d. Private	7	14%
	e. Own business	8	16%
5	How many years you have DM		
	a. 1-5 Yrs.	22	44%
	b. 6-10 Yrs.	17	34%

	c. Above 10 Yrs.	11	22%
6	Family history of DM		
	a. Yes	24	48%
	b. No	26	52%
7	Which treatment you taken		
	a. Oral Hypoglycemic Agents	27	54%
	b. Insulin	11	22%
	c. a & b	12	24%
8	Which media helps to get knowledge regarding foot care		
	a. Mobile Phone	15	30%
	b. Television	27	54%
	c. Newspaper	8	16%

Table-2: Frequency and percentage distribution of knowledge regarding foot care among diabetes patients

S.NO	SCORING INTERPRETATION	FREQUENCY	PERCENTAGE
1	INADEQUATE KNOWLEDGE	2	4%
2	MODERATE KNOWLEDGE	28	56%
3	ADEQUATE KNOWLEDGE	20	40%

Table-2: The outcome shows the frequency and percentage distribution of diabetic patients' foot care knowledge. 20 (40%) of the 50 samples showed appropriate knowledge of foot care, 28 (56%) showed intermediate knowledge, and 2 (4%) indicated inadequate knowledge.
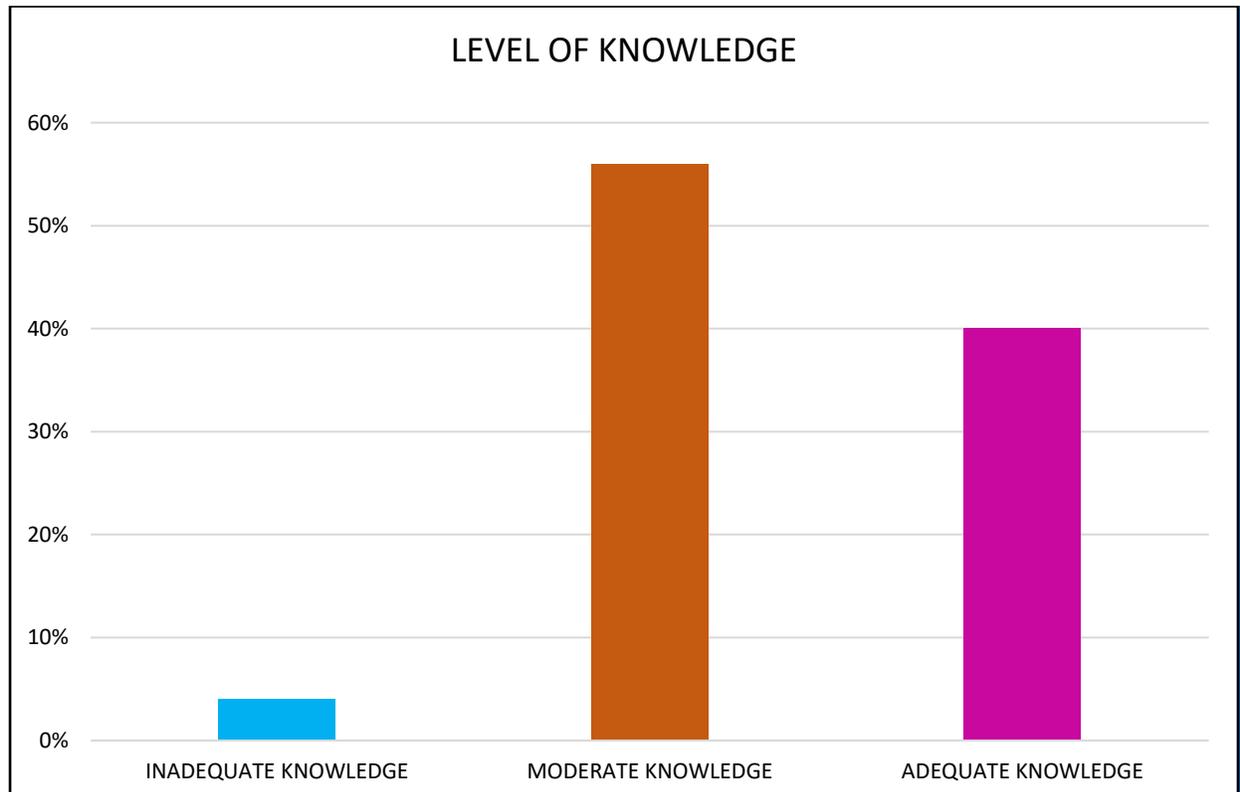
Table-3: Frequency and percentage distribution of self-efficacy regarding foot care among diabetes patients

S.NO	SCORING INTERPRETATION	FREQUENCY	PERCENTAGE
1	LOW EFFICACY	3	6%
2	MODERATE EFFICACY	30	60%
3	ADEQUATE EFFICACY	17	34%

Table-3: The result indicates Frequency and percentage distribution of self-efficacy regarding foot care among diabetes patients. 17 (34%) of the 50 samples showed appropriate knowledge of foot care, 30 (60%) showed intermediate knowledge, and 3 (6%) indicated inadequate knowledge.
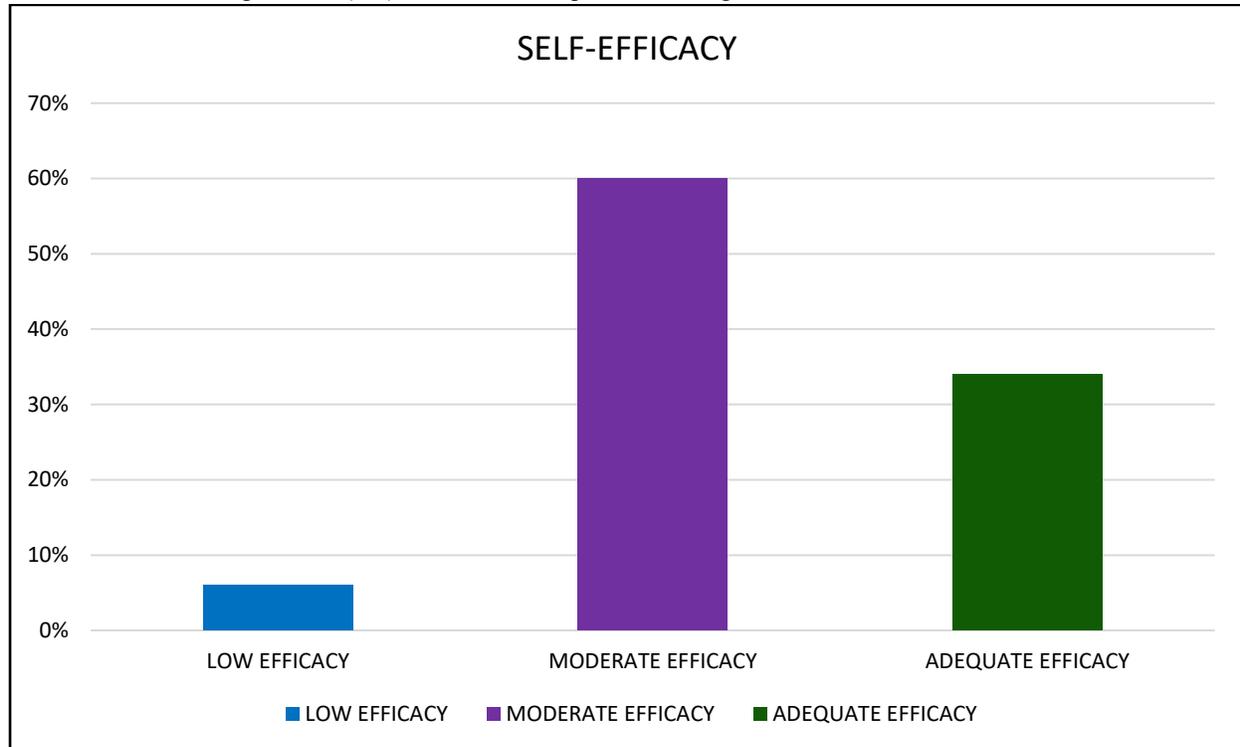

Table-4.1: Mean, Standard Deviation, Standard Error and t-value

KNOWLEDGE	Mean	Standard deviation	Standard Error	t-value
	12.3	3.5	0.5	24.85

*The t-test statistic is significant at the 0.05 level.

Table-4.0: The result of the study shows that the Mean score is 12.3, with a Standard Deviation of 3.5 and the Standard Error is 0.5. The t-value of 24.85 demonstrates a significance at p<0.05

Table-4.2: Mean, Standard Deviation, Standard Error and t-value

SELF-EFFICACY	Mean	Standard deviation	Standard Error	t-value
	6.52	1.68	0.24	23.24

**The t-test statistic is highly significant at the 0.05 level.

Table-4.1: The result of the self-efficacy shows that the Mean score is 6.52, with a Standard Deviation of 1.68 and the Standard Error is 0.24. The t-value of 23.24 demonstrates a high level of significance at p<0.05

Table – 5: Association between level of knowledge and selected socio demographic Variables

S.No	DEMOGRAPHIC VARIABLES	ADEQUATE KNOWLEDGE	MODERATE KNOWLEDGE	INADEQUATE KNOWLEDGE	CHI-SQUARE	VALUE
1	Age				0.25	0.99 NS
	a. 20-40 years	1	3	0		
	b. 41-60 years	11	15	2		
	c. 61-80 years	8	10	0		
2	Gender				3.92	0.14 NS
	a. Male	14	16	0		
	b. Female	6	12	2		
3	Education				7.63	0.47 NS
	a. Primary	11	7	1		
	b. Secondary	4	8	1		
	c. Undergraduate	3	6	0		
	d. Postgraduate	0	4	0		
	e. No formal education	2	3	0		
4	Occupation				11.96	0.152 NS
	a. Unskilled labor	9	10	2		
	b. Government	0	6	0		
	c. Retired	3	5	0		
	d. Private	2	5	0		
	e. Own business	6	2	0		
5	How many years you have DM				0.65	0.95 NS
	a. 1-5 Yrs.	9	12	1		
	b. 6-10 Yrs.	4	12	1		
	c. Above 10 Yrs.	7	4	0		
6	Family history of DM				0.12	0.94 NS
	a. Yes	9	14	1		
	b. No	11	14	1		
7	Which treatment you taken				0.22	0.994 NS
	a. Oral Hypoglycemic Agents	11	15	1		
	b. Insulin	6	5	0		
	c. a & b	3	8	1		
8	Which media helps to get knowledge regarding foot care				0.05	0.999 NS
	a. Mobile Phone	6	8	1		
	b. Television	10	16	1		
	c. Newspaper	4	4	0		

Table5: Shows that there is no significant association between age, gender, age, gender, education, occupation, history of diabetes mellitus, family history of diabetes mellitus, treatment, and how media might assist people learn about foot care

V. DISCUSSION

This study first objective was "To assess the knowledge regarding foot care among diabetes patient"

Out of 50 samples, 20 (40%) showed appropriate knowledge of foot care, 28 (56%) showed intermediate knowledge, and 2 (4%) indicated inadequate knowledge. This outcome is similar with the study carried out by Sutariya & Kharadi, et.al. (2016). It revealed the result of only 23% had good knowledge about foot care, while 50% had satisfactory knowledge, and 27% had poor knowledge. [10]

This study second objective was "To assess the self-efficacy regarding foot care among diabetes patient"

The self-efficacy shows that the Mean score is 6.52, with a Standard Deviation of 1.68 and the Standard Error is 0.24. The t-value of 23.24 demonstrates a high level of significance at $p<0.05$. This study supported by SK Ahmad Sharoni, MN Mohd Razi.et.al. The result is Levels of foot self-efficacy (mean+31.39; standard deviation=7.76) and foot care behaviour (mean=25.37; SD=5.88) were high. There was a positive significant relationship between foot self-efficacy (β = 0.41, p < 0.001) and gender (β = 0.30, p < 0.001) with foot care behaviour.[11]

This study third objective was "To find out the association between level of knowledge and their demographic variables"

There is no significant association between age, gender, age, gender, education, occupation, history of diabetes mellitus, family history of diabetes mellitus, treatment, and how media might assist people learn about foot care. It is supported by Reem Alsalamah, Saleh Hussain Alshaiban. Et.al (2025). The results is There was no statistically significant association between knowledge regarding diabetic foot care and patients' socio-demographic attributes [12]

VI. CONCLUSION

The present study aimed to assess the knowledge and self-efficacy regarding foot care among diabetes patients at a selected hospital in Trichy. Out of 50 samples, 20 (40%) showed appropriate knowledge of foot care, 28 (56%) showed intermediate knowledge, and 2 (4%) indicated inadequate knowledge. Strengthening patient education on foot care is essential in bridging the existing knowledge and practice gaps. This can significantly contribute to reducing the burden of diabetic foot complications in healthcare settings such as the one studied in Trichy.

VII. RECOMMENDATIONS

❖ A study may be carried out in various settings.
❖ This study can be conducted for a large group.

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