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**Dr. Satish B Nadagaddi**  
 Ph.D., Assistant Professor,  
 BLDEA'S Shri B M Patil  
 Institute of Nursing Sciences,  
 Vijayapur, Karnataka, India

**Devaraj KV**  
 4<sup>th</sup> Year B.Sc. Nursing  
 Student, BLDEA'S Shri B M  
 Patil Institute of Nursing  
 Sciences, Vijayapur,  
 Karnataka, India

**Deepakraj Kumar**  
 4<sup>th</sup> Year B.Sc. Nursing  
 Student, BLDEA'S Shri B M  
 Patil Institute of Nursing  
 Sciences, Vijayapur,  
 Karnataka, India

**Jyoti Choudihal**  
 4<sup>th</sup> Year B.Sc. Nursing  
 Student, BLDEA'S Shri B M  
 Patil Institute of Nursing  
 Sciences, Vijayapur,  
 Karnataka, India

**Jyoti Hugar**  
 4<sup>th</sup> Year B.Sc. Nursing  
 Student, BLDEA'S Shri B M  
 Patil Institute of Nursing  
 Sciences, Vijayapur,  
 Karnataka, India

**Janabai Kambale**  
 4<sup>th</sup> Year B.Sc. Nursing  
 Student, BLDEA'S Shri B M  
 Patil Institute of Nursing  
 Sciences, Vijayapur,  
 Karnataka, India

**Correspondence**  
**Dr. Satish B Nadagaddi**  
 Ph.D., Assistant Professor,  
 BLDEA'S Shri B M Patil  
 Institute of Nursing Sciences,  
 Vijayapur, Karnataka, India

## A study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of peripheral artery disease (PAD) among diabetic patients in selected hospitals at Vijayapur

**Dr. Satish B Nadagaddi, Devaraj KV, Deepakraj Kumar, Jyoti Choudihal, Jyoti Hugar and Janabai Kambale**

### Abstract

Diabetes is a complex chronic metabolic disorder, requiring continuous medical care with multifactorial risk reduction strategies, characterized by persistent hyperglycemia because of lack of insulin secretion, insulin resistance, or both. Its prevalence is steadily increasing in the world, most markedly in the lower- and middle-income countries. Among these, peripheral arterial disease (PAD) is one of the major complications of diabetes. Peripheral arterial disease is defined as an atherosclerotic narrowing of peripheral arteries of the legs, stomach, arms, and the head most commonly involving arteries of lower extremities. Diabetic patients with PAD are at high risk of increased morbidity and mortality from cardiovascular diseases and a high rate of lower extremity amputation. This increased risk of amputation in diabetes patients is due to dry gangrene, end-stage presentation of PAD, and foot ulcer secondary to PAD. Almost two-thirds of diabetic patients with foot ulcers have PAD, which is associated with a high amputation rate and mortality.

**Methods:** A pre experimental study was conducted among 60 diabetic patients who were selected by non-probability purposive sampling technique. The study was conducted in Acura Specialty hospital, Vijayapur.

**Result:** The analysis revealed that with regard to the level of knowledge in the pre-test most of the sample 38 (63.33%) had inadequate knowledge, whereas in the post-test most 33 (55%) of the sample had moderate level of knowledge. The mean post-test knowledge score (16.86±5.38) was higher than the mean pre-test knowledge score (9.15±3.63). The mean percentage of the post-test knowledge scores was higher (56.2%) when compared to mean percentage of the pre-test knowledge scores (30.5%). The calculated t value ( $t_{59}=9.50$ ,  $p<0.05$ ) was greater than the table value ( $t_{59}=1.67$ ) at 0.05 level of significance and there was no significant association found between pre-test knowledge scores with selected demographic variables.

**Keywords:** Structured teaching programme, knowledge, prevention, peripheral artery disease, patients, diabetic

### Introduction

Diabetes is a complex chronic metabolic disorder, requiring continuous medical care with multifactorial risk reduction strategies, characterized by persistent hyperglycemia because of lack of insulin secretion, insulin resistance, or both. Its prevalence is steadily increasing in the world, most markedly in the lower- and middle-income countries [1].

Through time, T2DM leads to early micro complications, peripheral neuropathy, peripheral retinopathy, and peripheral nephropathy, and late macro complications, which are a consequence of atherosclerosis of the arteries, including peripheral arterial disease, coronary artery disease, and cerebrovascular accident which all are potentially life-threatening [2].

Among these, peripheral arterial disease (PAD) is one of the major complications of diabetes. Peripheral arterial disease is defined as an atherosclerotic narrowing of peripheral arteries of the legs, stomach, arms, and the head most commonly involving arteries of lower extremities. It is a major complication of atherosclerosis [3] as well as a manifestation of atherosclerosis in major blood vessels like coronary and cerebral arteries. It results in systemic atherothrombosis that leads to cerebrovascular events, including myocardial infarction, stroke, significant long-term disability, and death [4].

Diabetic patients with PAD are at high risk of increased morbidity and mortality from cardiovascular diseases and a high rate of lower extremity amputation. This increased risk of amputation in diabetes patients is due to dry gangrene, end-stage presentation of PAD, and foot ulcer secondary to PAD. Almost two-thirds of diabetic patients with foot ulcers have PAD, which is associated with a high amputation rate and mortality [5].

## Materials and methods

### Statement of the Problem

“A study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of peripheral artery disease (PAD) among diabetic patients in selected hospitals at Vijayapur.”

### Objectives of the Study

The objectives of the study were to:

1. Assess the knowledge of diabetic patients regarding prevention of peripheral artery diseases.
2. Determine the effectiveness of structured teaching programme prevention of peripheral artery diseases among diabetic patients.
3. Find the association between pre-test knowledge score regarding prevention of peripheral artery diseases and the selected demographic variables.

### Assumptions

This study assumes that:

- Diabetic patients may not have adequate knowledge regarding prevention of peripheral artery diseases.
- Structured teaching programme on prevention of peripheral artery diseases may enhance the knowledge of diabetic patients.

### Hypotheses

The study is based on the following hypothesis and this will be tested at 0.05 levels of significance

#### H1

The mean post-test knowledge scores will be significantly higher than their mean pre-test knowledge scores.

#### H2

There will be significant association between the pre-test knowledge scores and the selected demographic variables.

### Population

A population is any group of individuals that have one or more characteristics in common that are of interest to the researcher. In this study, population includes diabetic patients in selected hospitals at Vijayapur.

### Sample

Sample is the subset of the units from the defined populations who are selected to participate in the study. The sample for the present study composed of 60 diabetic patients in selected hospitals at Vijayapur.

### Sampling Technique

Sampling defines the process of selecting a group of people or other elements with which conduct a study. In the present study the samples were selected by using non probability

purposive sampling technique.

### Criteria for Sample Selection

The following were the inclusive and exclusive criteria for the selection of the samples.

#### Inclusion criteria

The study will include the patients who are

1. Having type 2 diabetes mellitus.
2. Admitted in selected hospitals at Vijayapur.
3. Willing to participate in the study.
4. Able to read Kannada or English.

#### Exclusion criteria

The study will not include the patients who are

1. Not present at the time of data collection.
2. Not willing participate in the study.
3. Attended educational programme on prevention of peripheral artery diseases.

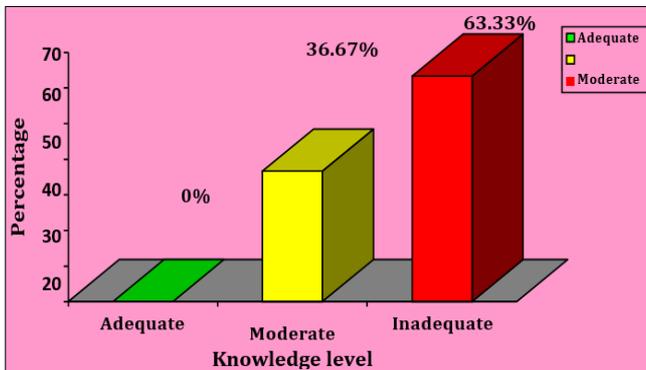
## Results

**Table 1:** Frequency and percentage distribution of demographic characteristics of diabetic patients n=60

Demographic variables	No. of patients (n)	Percentage (%)	
Age in years	40 – 47 years	11	18.3%
	48 – 55 years	32	53.3%
	56 – 63 years	12	20%
	64 – 70 years	05	08.3%
Gender	Female	21	35%
	Male	29	65%
Educational Status	Primary	15	25%
	Secondary	10	16.7%
	PUC	16	26.7%
	Degree and above	15	25%
	No formal education	04	06.7%
Occupation	Government sector	08	13.3%
	Private sector	13	21.7%
	Self employed	19	31.7%
	Retired	02	03.3%
	Dependent	04	06.7%
	Housewife	14	23.3%
Monthly family income	≥ 3,000/-	04	06.7%
	3,001 – 6,000/-	27	45%
	6,001 – 10, 000/-	17	28.3%
	≤ 10,001/-	12	20%
Area of residence	Rural	28	46.7%
	Urban	32	53.3%
Duration of illness	< 1 year	15	25%
	1 – 3 years	30	50%
	3 – 5 years	09	15%
	< 5 years	06	10%
Exercise	Walking	18	30%
	Jogging	09	15%
	Aerobic	05	08.3%
	None	28	46.7%
Source of information	Health personnel	18	30%
	Mass media	10	16.7%
	Family/friends	11	18.3%
	None	21	35%
Personal habits	Smoking only	11	18.3%
	Smoking and Alcohol	07	11.7%
	Pan chewing	06	10%
	None	36	60%

**Section A:** Pre-test knowledge level of diabetic patients n=60

Level of knowledge	Numbers of respondents	Percentage (%)
Inadequate	38	63.33%
Moderate	22	36.67%
Adequate	00	00%
Total	60	100

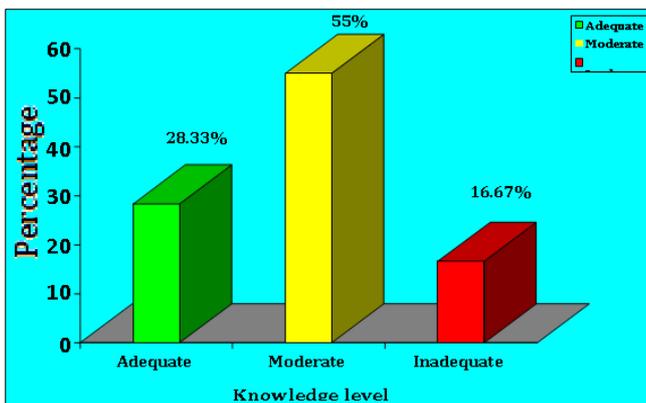


**Fig 1:** Column diagram depicting pre-test knowledge level of diabetic patients

The data presented in table 2 and figure 13 reveals that, majority of the diabetic patients i.e., 63.33% had moderately adequate knowledge, 36.67% of the diabetic patients had inadequate knowledge and none of diabetic patients had adequate knowledge regarding prevention of peripheral artery disease.

**Section B:** Post-test knowledge level of diabetic patients Percentage n=60

Level of knowledge	Numbers of respondents	Percentage (%)
Adequate	17	28.33%
Moderate	33	55%
Inadequate	10	16.67%
Total	60	100



**Fig 2:** Column diagram depicting post-test knowledge level of diabetic patients

The data presented in table 3 and figure 14 reveals that, majority of diabetic patients i.e., 28.33% had adequate knowledge, 55% of the diabetic patients had moderately adequate knowledge and 16.67% of the diabetic patients had inadequate knowledge after administration of structured teaching programme regarding prevention of peripheral artery disease.

**Association between the pre-test knowledge scores and the selected demographic variables**

**Table 2:** Association between pre-test knowledge scores with selected demographic variables n=60

Demographic variables		≤M	>M	Chi-square value (X <sup>2</sup> )	Remarks
		26.5	26.5		
Age in years	40 – 47 years	6	5	1.52 df= 3	Not Significant
	48 – 55 years	14	18		
	56 – 63 years	7	5		
	64 – 70 years	3	2		
Gender	Female	11	10	0.07 df= 1	Not Significant
	Male	19	20		
Educational Status	Primary	7	8	2.84 df= 4	Not Significant
	Secondary	4	6		
	PUC	7	9		
	Degree and above	9	6		
Occupation	No formal education	3	1	2.66 df= 4	Not Significant
	Government sector	3	5		
	Private sector	5	8		
	Self employed	10	9		
Monthly family income	Retired, Dependent	4	2	2.12 df= 3	Not Significant
	Housewife	8	6		
	≥ 3,000/-	2	2		
	3,001 – 6,000/-	15	12		
Area of residence	6,001 – 10, 000/-	9	8	0.27 df= 1	Not Significant
	≤ 10,001/-	4	8		
	Rural	15	13		
Duration of illness	Urban	15	17	3.33 df= 3	Not Significant
	< 1 year	9	6		
	1 – 3 years	12	18		
	3 – 5 years	5	4		
Exercise	< 5 years	4	2	0.83 df= 3	Not Significant
	Walking	9	9		
	Jogging	4	5		
	Aerobic	2	3		
Source of information	None	15	13	1.42 df= 3	Not Significant
	Health personnel	8	10		
	Mass media	4	6		
Personal habits	Family/friends	6	5	4.06 df= 3	Not Significant
	None	12	9		
	Smoking only	3	8		
	Smoking and Alcohol	5	2		
	Pan chewing	3	3		
	None	19	17		

'x<sup>2</sup>' (df1=3.84), 'x<sup>2</sup>' (df3=7.82), 'x<sup>2</sup>' (df4=9.49)NS- Not significant.

Chi-square test was done to analyze the association between the pre-test knowledge scores and the selected demographic variables. The study findings show that, there is no association between the pre-test knowledge score and selected demographic variables. Hence the research hypothesis H<sub>2</sub> is rejected.

**Nursing Education**

The nursing profession has a long history of viewing and caring for individuals in a holistic manner. A national conference conducted by National Institutes of Health of Alternative Medicine and the Uniformed Services University of Health Sciences concluded that nursing and medical education should include information about complementary and alternative therapies. Nurse educators

should consider the inclusion of complementary and alternative therapies in nursing curricula with increasing inherent in the nurse's role is the ability to assess, intervene and evaluate preventive, supportive, and restorative functions of a patient's physical, emotional, mental and spiritual domains.

### Nursing Practice

Diabetic patients are high risk for developing peripheral arterial disease. Life style practices such as smoking, obesity, increases the risk. Nurses need to take up the responsibility to educate and create awareness among diabetic patients to improve their knowledge and thus reduce the mortality and morbidity rate caused by peripheral arterial disease. Nurses can play a vital role in motivating the diabetic patients in lifestyle modifications by giving adequate counselling regarding healthy lifestyle practices.

### Nursing Research

Evidence based nursing practice must take higher profile in order to increase awareness on prevention of peripheral arterial disease among diabetic patients and help them to adopt lifestyle modification. Nursing research on video assisted teaching on prevention of peripheral arterial disease will be a valuable reference material for further researchers. Qualitative study can be undertaken to assess the self-report of the participants.

### Summary

This chapter deals with implication for nursing practice, nursing education, nursing administration, and nursing research, major recommendations, and limitations. The overall experience of conducting this study was a satisfying one as there was good cooperation by the participants. This study was a new learning experience for the researcher. The result of the present study shows that there is a great need of awareness regarding prevention of peripheral artery disease for diabetic patients.

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