# "A Study to Assess The Effectiveness of Planned Teaching Programme on Prevention and Management of Diabetic Foot Related Problems Among Diabetic Patients Admitted in Selected Hospital of Vadodara District."

| Rita Thapa | Sijo Koshy | Himanshu Patel |
|---|---|---|
| Associate Professor, SNC,Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India | Associate Professor, SNC,Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India | Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India |

| Janki Patel | Khushbu Patel |
|---|---|
| Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India | Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India |

| Masum Patel | Mukta Patel | Nikita Patel |
|---|---|---|
| Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India | Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India | Students, Sumandeep Nursing College, Sumandeep Vidyapeeth, Piparia, Vadodara-391760, Gujarat, India |

**ABSTRACT** *Background of the study:* Diabetes mellitus (DM) is the fourth leading cause of death in most developed countries. Foot problems are important contributory factors to the high morbidity and mortality observed in diabetic patients Therefore, an integrated management programme is needed in which optimal regulation of diabetes and associated co morbidity and regular communication and instruction of the patient will enhanced .

*AIMS AND OBJECTIVE:* The aim of the study is to impart knowledge regarding prevention and management among diabetic foot care.

*Material and Methods:* Pre experimental one group pre test and post test research design with quantitative approach was used. Simple random sampling technique was adopted to select 40 samples from dhiraj general hospital of Vadodara district. The tool used to collect data was self administered structured Knowledge questionnaire. Data was analyzed by descriptive and inferential statistics.

*Results:* Result of study reveals that the pre test mean knowledge score was 10.68 and post test mean score was 23.18. The paired 't' test value was 21.98* which is statistically significant at 0.05 level of degree of freedom. There was statistical significant association of pretest mean knowledge level score of diabetic patient with their selected demographic variables such as gender, income, family history and duration of diabetes.

*Conclusion:* It is concluded that the planned teaching programme was significantly effective in improving the knowledge level diabetic patient about prevention and management of diabetic foot. It has given a new avenue to the researcher to widen the horizon of research in the aspect of knowledge of prevention and management of diabetic foot.

## INTRODUCTION:

**"Every human being is the author of his own health or disease." -**
- Buddha.

The endocrine system has a far reaching effect in the human body because of its link with the nervous system and immune system. Metabolism depends upon the availability of fuel, oxygen and the balance of anabolic against catabolic processes. Regulation of this balance is dynamic and is one function of the endocrine and neuroendocrine system[1]. Diabetes Mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secreation, insulin action or both. It is the most common endocrine disorder and is on insidious disease, with the risk of developing it increasing with age type 2 diabetes is growing and is most commonly associated with adults over the age of 40 years [2]

Diabetes incurs large health status, consuming a large part of the health budget worldwide due to both direct cost and indirect costs. The need effective education of the general diabetic population about the measures of self-care that are indispensable to achieve both primary and secondary interventions. It is estimated that reductions in amputation rate between 45 and 85% can be achieved through the adoption and implementation of well organized diabetic foot care teams[.]

The foot problem in diabetic is multifaceted and there are no simple solutions. In all these patients the primary physician or the community care provider becomes the hub of the management. An integrated management programme is needed in which optimal regulation of diabetes and associated co morbidity and regular communication and instruction of the patient and his or her caregivers are taken careof.[4]

## CONCEPTUAL FRAME WORK :

Modified General System Model by Ludwig Von Bertalanffy
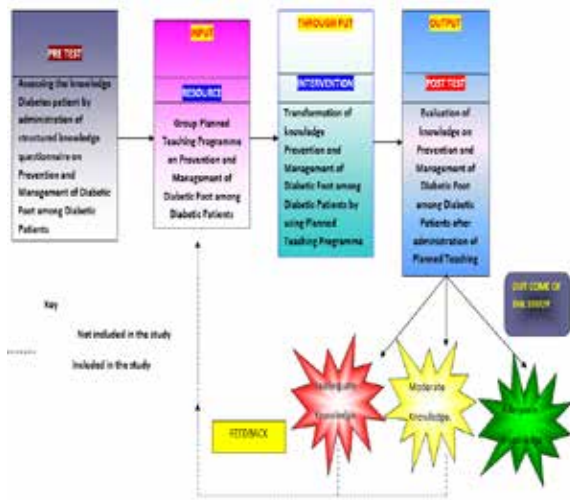
(1968) was used



**FIGURE: 1 CONCEPTUAL FRAMEWORK BASED ON GENERAL SYSTEM MODEL BY LUDWIG VON BERTA-LANFFY (1968)**

## PROBLEM STATEMENT
"A study to assess the effectiveness of planned teaching programme on prevention and management of diabetic foot among diabetic patients admitted in selected hospital of vadodara district.

## OBJECTIVES OF THE STUDY
1. To assess the Pre test knowledge score of the diabetic patient.
2. To evaluate the effectiveness of planned teaching programme regarding prevention and management of diabetic foot.
3. To find out association between pre test knowledge score and selected demographic variables.

## HYPOTHESIS
$H_1$ - There will be significant difference between pre test knowledge score and post test knowledge score of nurses regarding sensory alteration.

$H_2$- There will be significant association between pre test knowledge score and selected demographic variables.

## 1. ASSUMPTION:
2. The patients with diabetes may have inadequate knowledge regarding the care of diabetic foot.
3. The Planned Teaching Programme may improve the knowledge regarding care of diabetic foot among diabetes patients.

There will be relation in the knowledge level and their demographic variables.

## VARIABLES:
Dependent Variable - The knowledge on care of diabetic foot among diabetic patients.

Independent Variable - Planned teaching programme which is provided to patients.

## DELIMITATIONS
1. The study is delimited to selected hospitals in vadodara.
2. The study delimited to patients with diabetis mellitus.

## MATERIALS AND METHODS
**Research Approach:** Evaluation research approach was used.

**Research Design:** A one group pre-test post-test quasi experimental research design was adopted

**Setting of the Study:** The study was conducted in Dhiraj General Hospital of Vadodara District.

**Target Population:** The target population for this study consisted of Diabetic Foot patients

**Sample:** The sample for the present study comprises of 40 diabetic patients.

**Sampling technique:** Probability Simple random sampling technique was used.

## Development of tool for data collection:
**Section A**:-The demographic variables are gender, history of diabetes, family income, duration.

Section B:-It consists of 35 items on importance of Calcium rich diet during Pre-menopausal stage. The questionnaires consist of total 6 sections this are:-

Validity of instrument: Prepared tool along with the objective of the study, criterion rating scale and the blue print were submitted to 3 experts for content validity. One experts were from the field of Medical Surgical Nursing, one from Community Health Nursing & one from principal of sumandeep nursing college.

**Reliability:** The reliability of the tool was computed by using Split half technique employing Spearman Brown's Prophecy formula. The computed reliability coefficient of the knowledge tool was found to be ($r11$ )= 0.9494 and further, the statistical validity coefficient was found to be 0.9754. It was statistically significant and thus, the tool was found reliable.

Data collection procedure :The data collection was carried out from 17.09.2015. to 18.10. 2015. The purpose of the study was explained to the sample and informed consent was taken before starting the study. A test was conducted by self administered structured knowledge questionnaire to each sample.

Analysis of data: Both descriptive and inferential statistics analysed on the basis of objectives and hypothesis of the study before and after providing knowledge work analysed in terms of frequency, percentage, mean, and mean percentage and standard deviation. The comparision of pre and post test levels score were determined by paired 't' test, further, chi square was employed to measure the association between knowledge level and selected demographic variables. The test results were subjected for testing at 0.005 level of probability. The outcome of the results interpreted using diagrams and graphs.

## RESULTS
Section - 1 : Demographic Characteristics of Respondents

Section – 2 a: Overall and Aspect wise Pre test Knowledge Scores of Respondents on Prevention and Management of Diabetic foot

Section – 2 b: Overall and Aspect wise Post test Knowledge Scores of Respondents on Prevention and Management of Diabetic foot

Section – 2 c: Overall and Aspect wise Pre test and Post-test Knowledge Scores of Respondents on Prevention and Management of Diabetic foot

Section - 3: Association between Demographic variables and Posttest Knowledge level on Prevention and Man-

agement of Diabetic foot

## Section - 1 : Demographic Characteristics of Respondents
N=40

| Characteristics | Category | Respondents | |
| --- | --- | --- | --- |
| | | Number | Percent |
| Age group (years) | 30-35 | 4 | 10.0 |
| | > 35 | 36 | 90.0 |
| Gender | Male | 27 | 67.5 |
| | Female | 13 | 32.5 |
| Marital status | Married | 31 | 77.5 |
| | Unmarried | 4 | 10.0 |
| | Widow | 5 | 12.5 |
| Educational status | Illiterate | 4 | 10.0 |
| | Primary | 33 | 82.5 |
| | Higher secondary | 3 | 7.5 |
| Occupation | Private | 3 | 7.5 |
| | Business | 13 | 32.5 |
| | Government | 8 | 20.0 |
| | Self employed | 16 | 40.0 |
| Income | Rs.2,500-5,000 | 17 | 42.5 |
| | Rs.5,000-10,000 | 10 | 25.0 |
| | Rs.10,000-20,000 | 13 | 32.5 |
| Family history of Diabetes | Present | 14 | 35.0 |
| | Not present | 26 | 65.0 |
| Duration of Diabetes | 0-5 years | 10 | 25.0 |
| | 5-10 years | 13 | 32.5 |
| | 10-15 years | 17 | 42.5 |
| Total | | 40 | 100.0 |

**Table 1**: Depicts the classification of respondents by age, gender, marital status, education, occupation, income, family history and duration of diabetes. It is evident form the result that 90.0 per cent of respondents found in the age group of more than 35 years compared to 10.0 percent per cent noticed in age of 30-35 years. Majority of the respondents (77.5%) were males compared to 32.5 per cent were females.

The result indicate that higher percent (77.5%) of the respondents found to be married and 10.0 percent and 12.5 percent were unmarried and widow respectively. Majority of the respondents (82.5%) had education of primary followed by illiterate (12.5%) and higher education (7.5 %).

Distribution of respondent by occupation are shown in Table 1. It is observed that higher respondents (40.0 %) were involved as self-employed followed by business (32.5%), government employee (20.0 %) and private (7.5 %). The result indicate that 42.5 per cent of the respondents had a family income between Rs.2, 500-5,000 followed by 32.5 percent of respondents with income of rs. 10,000-20,000 and 25.0 percent of respondents with income of Rs.5,000-10,000 .

Higher respondents (65.0 %) noticed with presence of family history of diabetes as compared to remaining 35.0 percent of family members not noticed with diabetes history.

Regarding duration of diabetes the findings showed that 42.5 percent of respondents had diabetes since 10-15 years followed by 32.5 percent with 5-10 years and remaining 25.0 percent noticed incidence of diabetes since 0-5 years.

## Section – 2c: - Overall and Aspect wise Pre test and Post test  Knowledge Scores of Respondentson Prevention and Management of Diabetic foot
N=40

| Aspects | Max. Score | Respondents Knowledge | | | | Paired 't' Test |
| --- | --- | --- | --- | --- | --- | --- |
| | | Mean | SD | Mean (%) | SD (%) | |
| Pre test | 30 | 10.68 | 3.8 | 35.6 | 12.7 | |
| Post test | 30 | 23.18 | 2.3 | 77.3 | 7.7 | 21.98* |
| Enhancement | 30 | 12.50 | 3.6 | 41.7 | 12.0 | |

* Significant at 5% level,
   t (0.05,39df ) = 1.96

**Table 2:** Depicts the overall pre test and post test knowledge mean scores on prevention and management of diabetic foot. It is evident from the result that the pre test knowledge mean score found to be 10.68 (35.6 %) with SD as 3.8 as compared to post test mean knowledge score of 23.18 (77.3 %) and SD as 2.3.

Further, the enhancement of mean knowledge score found to be 12.50 (41.7 %) with SD as 3.6. However, the statistical paired t-test indicate the enhancement knowledge was found to be statistically significant (t = 21.98*, p<0.05) revealing the effectiveness of planned teaching programme

on prevention and management of diabetic foot (Figure-7).

## Section – 3: - Association between Demographic variables and Post test Knowledge level on Prevention and Management of Diabetic foot
### n=40

| Demographic Variables | Category | Sample | Knowledge Level | | | | $x^2$ Value | P Value |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | Inadequate | | Moderate | | | |
| | | | N | % | N | % | | |
| Age group (years) | 30-35 | 4 | 3 | 75.0 | 1 | 25.0 | 0.05 NS | P>0.05 |
| | > 35 | 36 | 25 | 69.4 | 11 | 30.6 | | |
| Gender | Male | 27 | 22 | 81.5 | 5 | 18.5 | 5.22* | P<0.05 |
| | Female | 13 | 6 | 46.2 | 7 | 53.8 | | |
| Marital status | Married | 31 | 22 | 71.0 | 9 | 29.0 | 0.30 NS | P>0.05 |
| | Unmarried | 4 | 3 | 75.0 | 1 | 25.0 | | |
| | Widow | 5 | 3 | 60.0 | 2 | 40.0 | | |
| Educational status | Illiterate | 4 | 3 | 75.0 | 1 | 25.0 | 1.51 NS | P>0.05 |
| | Primary | 33 | 22 | 66.7 | 11 | 33.3 | | |
| | Higher secondary | 3 | 3 | 100.0 | 0 | 0.0 | | |
| Occupation | Private | 3 | 3 | 100.0 | 0 | 0.0 | 3.12 NS | P>0.05 |
| | Business | 13 | 10 | 76.9 | 3 | 23.1 | | |
| | Government | 8 | 6 | 75.0 | 2 | 25.0 | | |
| | Self employed | 16 | 9 | 56.3 | 7 | 73.7 | | |
| Income | Rs.2,500-5,000 | 17 | 13 | 76.5 | 4 | 23.5 | 6.00* | P<0.05 |
| | Rs.5,000-10,000 | 10 | 9 | 90.0 | 1 | 10.0 | | |
| | Rs.10,000-20,000 | 13 | 6 | 46.2 | 7 | 53.8 | | |
| Family history of Diabetes | Present | 14 | 13 | 92.9 | 1 | 7.1 | 5.36* | P<0.05 |
| | Not present | 26 | 15 | 57.7 | 11 | 42.3 | | |
| Duration of Diabetes | 0-5 years | 10 | 10 | 100.0 | 0 | 0.0 | 6.13* | P<0.05 |
| | 5-10 years | 13 | 7 | 53.9 | 6 | 46.1 | | |
| | 10-15 years | 17 | 11 | 64.7 | 6 | 35.3 | | |
| Combined | | 40 | 28 | 70.0 | 12 | 30.0 | | |

\* Significant at 5% Level,
  NS : Non-significant

**Table 3**:-shows that the association between the post test level of knowledge and demographic variable. Based on the objective used to chi square test used to associate the level of knowledge and selected demographioc variable. The test value shows that there was significant association between post test knowledge and demographic variables such as type of family. The calculated value was greater than the table value at 0.005 level of significance. But there no significance association between post test knowledge and demographic variables such as age of patient, occupation, education, monthly income and history of family

## DISCUSSION
The present study was conducted to determine the effectiveness of planned teaching programme on prevention and management of diabetic patients admitted in dhiraj general hospital of vadodara district.The findings of this study is consistent with the findings of the study conducted on "Prevention and Management of Diabetic patients admitted in dhiraj general hospital of vadodara district". In this study 13 female patients, 27 male patients were assessed regarding their prevention and management of diabetic patients. In response to the educational intervention, significant improvements were seen in terms of patient's ability to define diabetes.

## CONCLUSION
The following conclusion can be drawn from the study findings, which are supported by evidence from other literature;

Patients have adequate knowledge regarding prevention and management of diabetic foot as well as the diseases can be spread due to effect of diabetic foot. The planned teaching program has shown remarkably increase in the knowledge score of the patients. Using the statistical formulas we have computed the difference between pre-test and post-test , and highly significant difference is shown in knowledge score of the patients in all the segments. Hence , the stated Hypothesis H1 was accepted. Thus , the present study of analysis so association of knowledge level of diabetic patients with selected demographic variable reveals that there is statistical association of the pre test knowledge level of diabetic patients with gender, income, duration, family history. Hence H2 is accepted however, the stated hypothesis H2 is rejected with the other selected demographic variable like age group , marital status, education status and occupation. So we can conclude that the planned teaching program on prevention and management of diabetic foot among diabetic patients has shown its impact on increase knowledge level of patients regarding prevention and management of diabetic foot.

## ACKNOWLEDGEMENT

## RECOMMENDATIONS
On the basis of the findings of the study following recommendations have been made are:
1. A similar study can be replicated on large sample to generalize the findings.
2. An experimental study can be conducted with control group for the effective comparison of the results.
3. A similar study can be conducted among different age group of diabetic patient.
4. A study can be carried out to evaluate the efficiency of various teaching strategies like self-instructional mod-

ule, A.V. aids on importance of prevention and management of diabetic patients.

5.  A study can be conducted by including other additional socio- demographic variables that may influence the level of knowledge of the diabetic patients.

6.  A study can be carried out to evaluate the effectiveness of planned teaching Programme on prevention and management of diabetic patients

**REFERENCE**    1. Joyce M Black, Jane Hokanson Hawks. "Medical Surgical Nursing". 7th edition, 2007, vol-I ; P:No; 1243-1244 2. Suzanne. C. Smeltzer; Brenda. G. Bare. "Text book of medical Surgical Nursing". 10th edition;2004; p:No;1150-1153. 3. Vijay Viswanathan, SharadPendsey, Arun Bal. "Diabetic foot in India'', 2005. 4. Canadian Agency for drug and Technology. "Diabetic foot". New England Journal of Medicine, 1996; June 334(25) 1642-1648.