

# "A STUDY TO ASSESS THE EFFECTIVENESS OF HEALTH TEACHING PROGRAM ON KNOWLEDGE REGARDING DIABETES MELLITUS AMONG THE PEOPLE ABOVE 35 YEARS OF AGE RESIDING AT SELECTED URBAN SLUM AREA OF PUNE CITY.

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## ABSTRACT

The purpose of this study was to assess effectiveness of health teaching program on knowledge regarding Diabetes Mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.

### Objectives:

- 1 To assess the pre-test level of knowledge regarding diabetes mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.
- 2 To plan and administer health teaching program on diabetes mellitus.
- 3 To assess the post-test level of knowledge regarding diabetes mellitus among age group above 35 years of age residing at selected urban slum area of Pune city .
- 4 To find the association between knowledge regarding diabetes mellitus with selected demographic variables.

**Methods:** Methods: The Conceptual Framework used in the present study based on General System Theory. The study involves evaluative approach and the design was one group pre test post test pre -experimental design. The study was conducted on 60 subjects above 35 years of age using structured knowledge questionnaire.

**Key terms:** Effectiveness, Health Teaching Program, Diabetes Mellitus, Urban slum

## I. INTRODUCTION:

Diabetes mellitus is a heterogeneous group of disease characterized by chronic elevation of glucose in the blood. It arises because the body is unable to produce enough insulin for its own needs, either because of impaired insulin secretion, impaired insulin action, or both.

The term "Diabetes Mellitus" described a metabolic disorder of multiple etiology characterized by chronic hyperglycemia with disturbances of carbohydrates, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The effects of diabetes mellitus include long term damage, dysfunction and failure of various organ.

Globally, as of 2010, an estimated 285million people had diabetes with type 2 making up about 90% of the cases. In 2013, according to International Diabetes Federation, an estimated 381 million people had diabetes. Its prevalence is increasing rapidly, and by 2030, this number is estimated to almost double. Diabetes mellitus occurs throughout the world, but is more common in the more developed countries. The greatest increase in prevalence is, however, expected to occur in Asia and Africa, where most patents will probably be found in 2030. The increase in incidence in developing countries follows the trend of urbanization and lifestyle changes, perhaps most importantly a "Western-style" diet.

India has more diabetics than any other country in the world, according to the International Diabetes Foundation, although more recent data suggest that China has even more. According to the Indian Heart Association, India is the diabetes capital of the world with a projected 109 million individuals with diabetes by 2035. The disease currently affects more than 62 million individuals, which is more than 7.1% of India's adult population. An estimate shows that nearly 1 million Indians die due to Diabetes every year. The average age on onset is 42.5 years. The high incidence is attributed to a combination of genetic susceptibility plus adoption of a high-calorie, low-activity lifestyle by India's growing middle class. Additionally, a study by the American Diabetes Association reports that India will see the greatest increase in people diagnosed by diabetes by 2030.

The survey revealed that 289 male and 221 females with type 2 diabetes in the urban of the district. Out of 510 subjects examined, maximum persons 156 were in 30-39 years age group, followed by 98 from 40-49 years age group, however only 17 were belonging to 60 year and above. The educational status of the population was also studied. Around 38 subjects were illiterate. It was shown that awareness of diabetes was much better in college going and professionals than illiterate and primary passed persons. Myth about the cure of diabetes was highest in secondary and higher secondary persons.

Diabetes Mellitus has emerged as one of the most challenging public health problems in the 21st century. It currently affects over 366 million people worldwide and this figure is likely to double by 2030. The greatest burden of this condition is felt in low and middle income countries, and these nations account for about 80% of all cases of diabetes. In sub-Saharan Africa alone, there are about 12 million people suffering from this condition and there are projections that this number will reach 18 million by 2030, making the region one with the fastest growing rates of diabetes mellitus the world. In Gambia for instance, the incidence of DM has been projected to increase by three-fold within this period; that is from 22,000 cases in 2012 to 61,000 by 2030.

Researcher selected this topic, to assess effectiveness of health teaching program on knowledge regarding diabetes mellitus among the people above 35 years of age because this is a metabolic disorder and major health problem of the countries. Low and middle income countries face the greatest burden of diabetes mellitus and continues to increase in numbers and significance as a changing lifestyle lead to reduce physical activity, increase obesity.

#### **Problem Statement:**

"A study to assess the Effectiveness of Health Teaching Program on Knowledge Regarding Diabetes Mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.

#### **Objectives:**

- 1 To assess the pre-test level of health teaching program regarding Diabetes Mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.
- 2 To plan and administer health teaching program on diabetes mellitus.
- 3 To assess the post-test level of knowledge regarding diabetes mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.
- 4 To find the association between knowledge regarding diabetes mellitus with selected demographic variables.

#### **Hypothesis:**

H0: There will be no significant difference between pre-test and post-test level of knowledge regarding Diabetes Mellitus after administration of health teaching programme.

H1: There will be significant difference between pre-test and post-test level of knowledge regarding Diabetes Mellitus after administration of health teaching programme.

## **II. REVIEW OF LITERATURE**

Faisal a Latif Alnasir, 2003, conducted a study on to assess the knowledge of diabetes mellitus among school teachers. Findings indicate school teachers have inadequate knowledge of the basic facts of diabetes and its

treatment, a situation, which could have dangerous consequences for the child and complicate his or her schooling in a number of ways.. The result of the study showed that school teachers in Bahrain are deficient in diabetic knowledge and basic facts of diabetes and its treatment.

CH Ding, CL Teng, CN Koh 2006 conducted a study to assess knowledge of Diabetes Mellitus Among Diabetic and Non-Diabetic Patients in Klinik Kesihatan conducted a cross sectional study describe the knowledge Patients with diabetes mellitus had better knowledge than patients who were not suffering from diabetes mellitus in Klinik Kesihatan Seremban , and health education is the important tool on creating awareness and prevention of diabetes mellitus.

W.Maier,R. Holle,M.Hunger , A. Peters , et.al. 2013, conducted a study to assess the impact of regional deprivation and individual socio-economic status on the prevalence of Type 2 diabetes in Germany. A pooled analysis of five population-based studies. Result shows that diabetes prevalence in Germany is significant part to regional deprivation independently of individual socio-economic status. The findings of this study are useful for public health to target implementation programmes in deprived regional places .

Richard F,Hamman , Edward Horton, Elizabeth Barrett-Connor ,et al., (2014) conducted a study on Factors Affecting the Decline in Incidence of Diabetes in the Diabetes Prevention Program Outcomes Study (DPPOS). No combination of risk variables explained the decline in rates .Thus, it does not appear that effective intervention was the reason for the decline in rates.

Maurice J O'kane ,Brendan Bunting ,Margaret Copeland , et.al. (2013 )conducted a a study on efficacy of self monitoring of blood glucose in patients with newly diagnosed type 2 diabetes (ESMON study): Randomized controlled trial In patients with newly diagnosed type 2 diabetes self monitoring of blood glucose concentration has no effect on glycaemic control but is associated with higher scores on a depression subscale.

### III. RESEARCH METHODOLOGY RESEARCH APPROACH

The research approach is an **evaluative approach** to assess the effectiveness of health teaching program on knowledge regarding Diabetes Mellitus among the people above 35 years of age residing at selected urban slum area of Pune city.

#### RESEARCH DESIGN

A one group pre -test post test pre -experimental design was chosen for the study.

#### SETTING OF THE STUDY

Study was conducted in selected urban slum area of Pune city i.e. Meenatai Thakre Vasahat.

#### POPULATION

In this study population is the people above 35 years of age residing at selected urban slum area of Pune city.

#### SAMPLE:

Sample consisted of 60 subjects above 35 years of age residing at selected urban slum area of Pune city.

#### CRITERIA FOR SELECTION OF SAMPLE

##### INCLUSION CRITERIA

- Study is limited only to age group above 35 years.
- People who are willing to participate in study.
- People who are available at the time of data collection.

##### EXCLUSIVE CRITERIA

- People who are below 35 years of age .

- People who are not available at the time of data collection.
- People who are not willing to participate in study.

### **SAMPLING TECHNIQUE**

The sampling technique used in this research study is Non probability purposive sampling technique.

#### **ASSUMPTIONS:**

- It is assumed that people will have some knowledge about disease condition.
- People will participate and cooperate in the study.
- Health teaching program is one of the recognized methods of improving knowledge
- Socio –demographic variables like gender, age, occupation, income, religion, socio- economic status, source of knowledge.

#### **LIMITATIONS:**

- Study is limited to Meenatai Thakre Vasahat Area.
- Study is limited to people above 35 years.
- Study is limited to knowledge regarding Diabetes Mellitus.

#### **VARIABLES:**

Three types of variables were identified in this study. They are independent, dependent and extraneous variables.

Independent variables:

In this study Health teaching program regarding Diabetes mellitus is the independent variable.

#### **Dependent variables:**

Knowledge regarding diabetes mellitus is the dependent variable in the study.

#### **Extraneous Variable:**

The Extraneous variables in this study are selected demographic variables i.e. age ,gender ,religion ,type of family, education ,occupation, income ,previous knowledge

### **DATA COLLECTION INSTRUMENTS:**

#### **DEVELOPMENT OF THE TOOL**

The tool was developed after:

- Review of literature which provided adequate content area and information.
- Consultation and discussion with experts from Nursing and Medical officers.
- A blue print was prepared, regarding the content of general information of Diabetes Mellitus.

#### **DESCRIPTION OF THE TOOL:**

The tool was developed after an extensive review and study of literature was done before developing the tool.

The tool consist of

- Demographic data
- Structured questionnaire
- Observational checklist
- Planned Structured health Teaching Program

**CONTENT VALIDITY:** To ensure the content validity of a prepared tool, it was validated by eight experts in the field of nursing ,one Medical Officer from Pune Municipal Corporation and one statistician.

**RELIABILITY OF THE TOOL:**

The tool was tested for reliability by administering 10 samples, who met the selection criteria. Reliability was established by using test – retest method. The reliability of the tool was recorded and was found to be reliable for the study.

**PILOT STUDY:**

The pilot study was conducted from 23<sup>rd</sup> August 2019 to 2<sup>nd</sup> September 2019, on 10 samples, to assess feasibility of the study and to decide the plan for data analysis.

**PROCEDURE FOR DATA COLLECTION:**

Before collecting the data, permission was obtained from the concerned authority. Keeping in mind the ethical aspects of research, the data was collected after obtaining the informed consent from participants. The participants were assured anonymity and confidentiality of information provided by them. The researcher collected the data from the participants. Data was collected from 3<sup>rd</sup> October 2019 to 10<sup>th</sup> December 2019 followed by administration of structured health teaching program. The duration of the session was 30 minutes. Post-test was conducted after 7days of administration of health teaching programme.

**Major findings of the study:** The findings of the study were organized and presented as follows:

**SECTION I**

Analysis of data related to description of samples based on their demographic data .

**SECTION II**

Analysis of data related to the knowledge regarding diabetes mellitus among age group above 35 years.

**SECTION III**

Analysis of data related to effectiveness of health teaching program on knowledge regarding diabetes mellitus among the people above 35 years of age .

**SECTION IV**

Analysis of data related to association between knowledge and selected demographic variables.

**SECTION I: Findings related to the demographic data**

**Description of samples based on their demographic data:**

	Pretest	
	Freq	%
Poor (Score 0-8)	37	61.7%
Average (Score 9-16)	23	38.3%

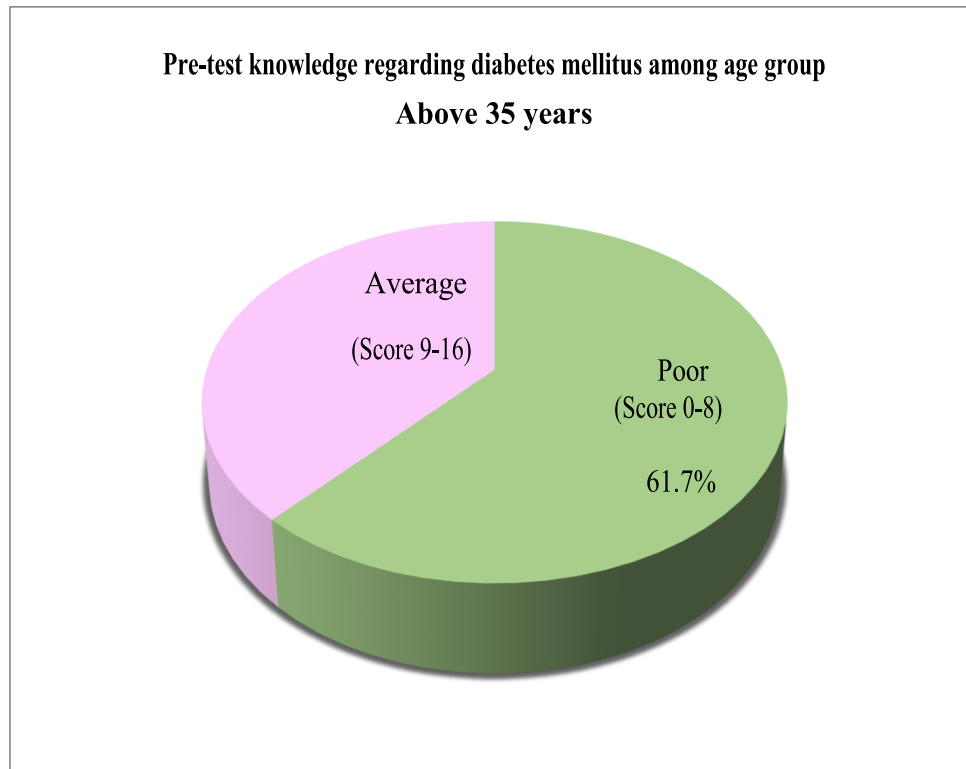
Good (Score 17-25)	0	0.0%
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Majority of the samples 38.3% were in the age group 45-54 years, 41.7% of them were from Hindu religion , 53.3% of them from nuclear family, 48.3% of them had secondary education ,51.7% of them had private service, 25% of them were unemployed ,41.7% of them had income Rs. 10000-20000, 51.7% of them had previous knowledge from television.

**SECTION II**

**Analysis of data related to knowledge regarding diabetes mellitus among age group above 35 years**

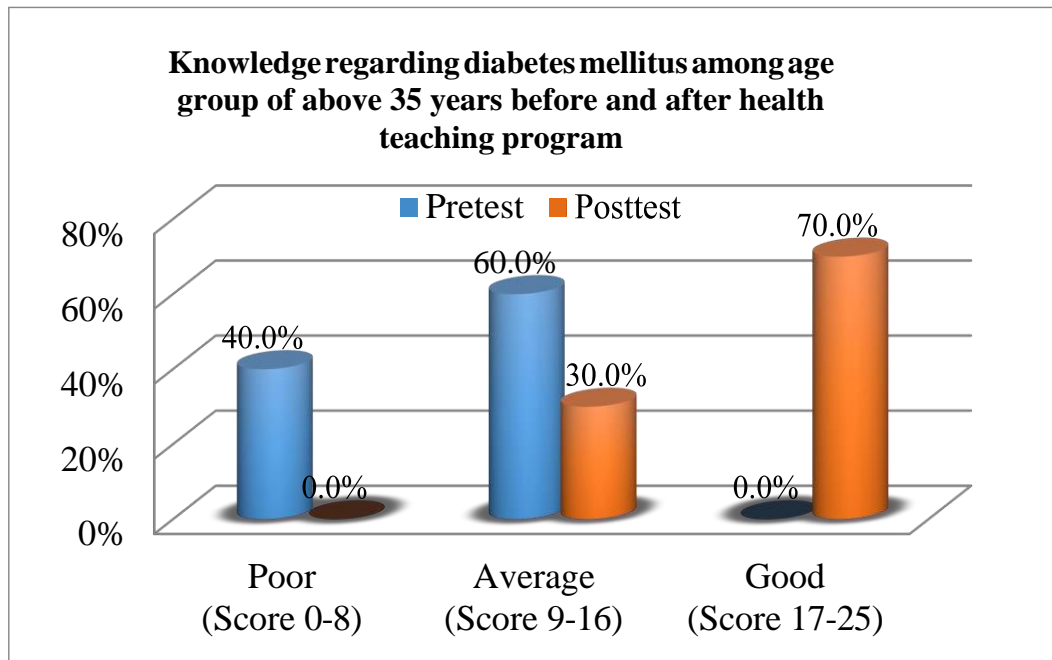
Table 2: Knowledge regarding diabetes mellitus among age group above 35 years N=60



Majority of 61.7% of the people had poor knowledge (score 0-8) and 38.3% of them had average knowledge (score 9-16) regarding diabetes mellitus.

**SECTION II-A-Assess the post-test level of knowledge regarding Diabetes Mellitus among age group above 35 years**

Knowledge	Pretest		Posttest	
	Freq	%	Freq	%
Poor (Score 0-8)	4	40.0%	0	0.0%
Average (Score 9-16)	6	60.0%	3	30.0%
Good (Score 17-25)	0	0.0%	7	70.0%



In pretest, majority of 60% of the people had average knowledge (score 9-16) and 40% of them had poor knowledge (score 0-8) regarding diabetes mellitus. In posttest 70% of them had good knowledge (Score 17-25) and 30% of them had average knowledge (score 9-16) regarding Diabetes Mellitus. This indicates that the knowledge of people improved remarkably after health teaching program.

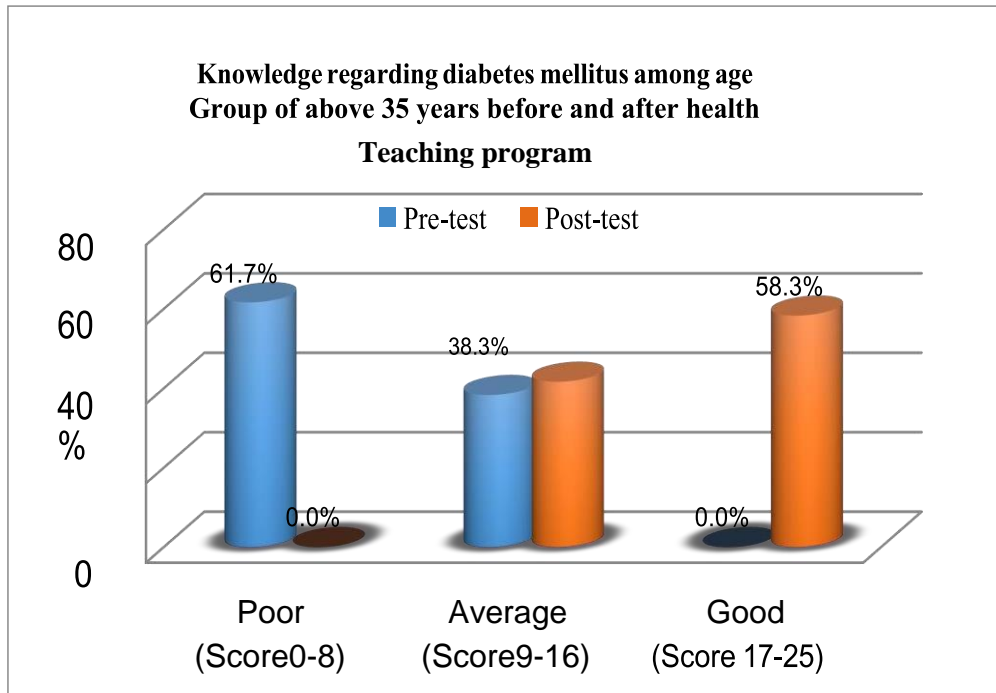
**SECTION III:**

**Analysis of data related to effectiveness of health teaching program on knowledge regarding Diabetes Mellitus among the people above 35 years**

Table 3: Effectiveness of health teaching program on knowledge regarding Diabetes Mellitus among the people above 35 years

**N=60**

Knowledge	Pretest		Posttest	
	Freq	%	Freq	%
Poor (Score 0-8)	37	61.7%	0	0.0%
Average (Score 9-16)	23	38.3%	25	41.7%
Good (Score 17-25)	0	0.0%	35	58.3%

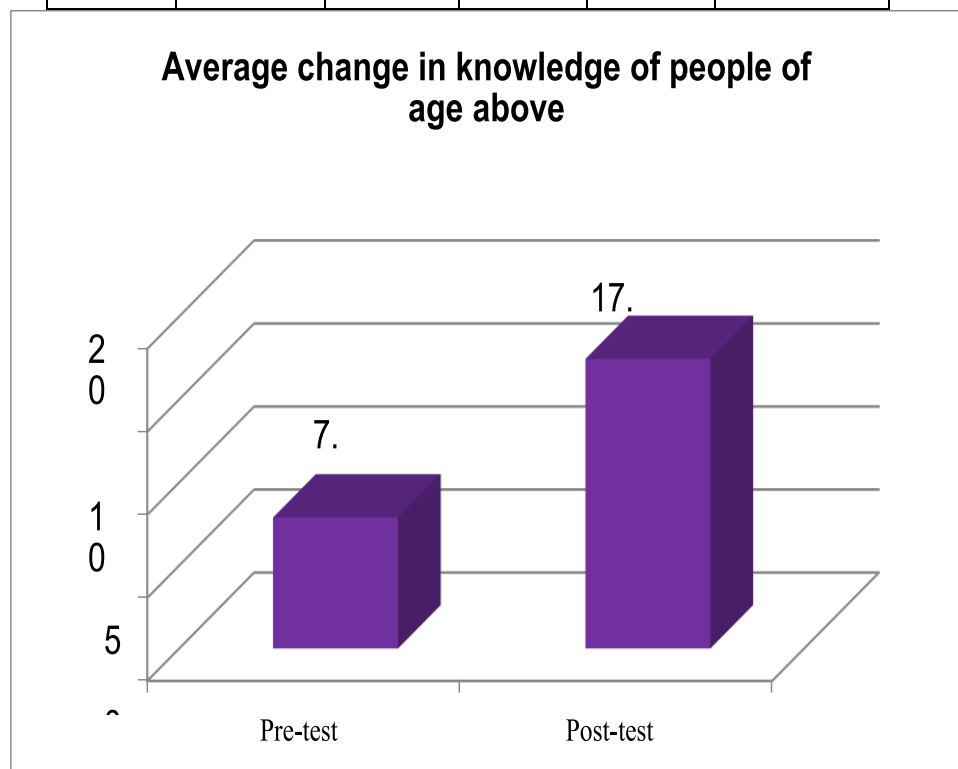


In pretest, majority of 61.7% of the people had poor knowledge (score 0-8) and 38.3% of them had average knowledge (score 9-16) regarding diabetes mellitus. In posttest 58.3% of them had good knowledge (Score 17-25) and 41.7% of them had average knowledge (score 9-16) regarding Diabetes Mellitus. This indicates that the knowledge of people improved remarkably after health teaching program.

**Table 4: Paired t-test for effectiveness of health teaching program on knowledge regarding Diabetes Mellitus among the people above 35 years of age**

N=60

	Mean	SD	t	df	p-value
Pretest	7.9	2.5	50.9	59	0.000
Posttest	17.4	3.1			





Researcher applied paired t-test for comparison of knowledge scores of samples before and after health teaching program. Average pretest knowledge score was 7.9 which increased to

17.4 in posttest. T-value for this comparison was 50.9 with 59 degrees of freedom. Corresponding p-value was small (p-value=0.000, smaller than 0.05), the null hypothesis is rejected. Health teaching program was found to be significantly effective in improving the knowledge of people regarding Diabetes Mellitus.

**SECTION IV**

**Analysis of data related to the association between knowledge and selected demographic variables**

Association between knowledge and selected demographic variables was assessed using Fisher’s exact test. The summary of Fisher’s exact test is tabulated below:

**Association between knowledge and selected demographic variables**

**N=60**

Demographic variable		Average	Poor	p-value
Age	35-44 years	18	1	0.000
	45-54 years	5	18	
	55-64 years	0	17	
	65 and Above	0	1	
Gender	Male	10	29	0.011
	Female	13	8	
Religion	Hindu	8	14	0.006
	Muslim	5	20	
	Christian	5	1	
	Others	5	2	
Type of family	Nuclear	12	20	0.010
	Joint	1	11	
	Separated	7	6	
	Nano	3	0	
Education	Illiterate	2	3	0.000
	Primary	3	15	
	Secondary	10	19	
	Any other	8	0	
Occupation	Private	12	19	0.428
	Government	2	0	
	Unemployed	5	10	
	Any Other	4	8	
Income	5,000-10,000/ month	5	24	0.001
	10,000-20,000/month	13	12	
	Above 20,000/month	5	1	
Source of previous knowledge	News Paper	2	7	0.396
	Television	13	18	
	Radio	2	7	
	Any Other	6	5	

Since p-values corresponding to age, gender, religion, type of family, education and income are small (less than 0.05), demographic variables age, gender, religion, type of family, education and income were found to have significant association with the knowledge of people regarding Diabetes Mellitus.

#### IV. CONCLUSION:

Following conclusions were drawn from the findings of the present study.

- In pre-test, majority of 61.7% of the people had poor knowledge (score 0-8) and 38.3% of them had average knowledge (score 9-16) regarding diabetes mellitus
- In post-test 58.3% of them had good knowledge (Score 17-25) and 41.7% of them had average knowledge (score 9-16) regarding Diabetes Mellitus
- This indicates that there is increase of the post-test knowledge score after structured teaching health program regarding Diabetes Mellitus among the people age of above 35 years old.

#### RECOMMENDATIONS:

From the findings of the present study, the following recommendations have been suggested: -

- It is suggested that the study may be used in a larger population of age group of above 35 years old.
- This study can be done in different districts of Maharashtra and in different states of India.
- A comparative study can be done to assess the effectiveness of structured teaching program among the age group of above 35 years old.
- A study should be undertaken to assess the attitude and practices regarding Diabetes Mellitus.

#### IMPLICATIONS OF THE STUDY:

The findings of the study has implications in core areas of nursing profession i.e.for Nursing

Education, administration and management, public health and Research.

#### MEDICAL SURGICAL NURSING

- The study will be helpful to evaluate the underlying cause, complications, management and prevention of Diabetes Mellitus.
- By preventing Diabetes Mellitus, life span of people can be improved,
- This study will be useful to assess the knowledge regarding the Diabetes Mellitus.

#### COMMUNITY HEALTH NURSING

- This study is useful to assess the knowledge of Diabetes Mellitus in Community.
- To assess the relationship between the demographic variables and knowledge regarding prevention of Diabetes Mellitus.

#### NURSING IMPLICATION

It is the responsibility of the nursing personnel to teach about Diabetes Mellitus and its ill effect on an individual.

#### NURSING EDUCATION

Study will contribute in modification of curriculum, so that the nursing student will develop the necessary skill and knowledge regarding prevention of Diabetes Mellitus.

**NURSING RESEARCH**

Nursing research is an essential aspect of nursing education as it uplifts the profession, develop new Nursing norms and enhance the body of nursing knowledge. It also improves the image and perception of nursing in society which is urgently required for the future of nursing.

Based on the findings of the study, the investigator desires to recommend further studies

- It is suggested that the study may be replicated using a large population of age group of above 35.
- This study can be done in different districts of Maharashtra and in different states of India.
- A comparative study can be done to assess the effectiveness of structure teaching program among the people age of above 35 years old.

**REFERENCES:**

- 1 Faisal A Latif Alnasir, 2003, Assessment of Knowledge of Diabetes Mellitus among Bahraini School Teachers .Bahrain Medical Bulletin, Vol. 25, No. 4, December 2003
- 2 C H Ding, C L Teng, CN Koh 2006, Knowledge of Diabetes Mellitus Among Diabetic and Non-Diabetic Patients in Klinik Kesihatan. November 2006, The Medical Journal of Malaysia 61(4) :399-404.
- 3 W.Maier,R. Holle,M.Hunger , A. Peters , et.al. (2013)The Impact of regional deprivation and individual socio-economic status on the prevalence of Type 2 Diabetes in Germany. A pooled analysis of five population-based studies. Diabetes Med. 2013 Mar.
- 4 Richard F,Hamman , Edward Horton, Elizabeth Barrett-Connor ,et al (2014).Factors Affecting the Decline in Incidence of Diabetes in the Diabetes Prevention Program Outcomes Study (DPPOS) Diabetes. 2015 Mar; 64(3): 989–998. Published online 2014 Oct 1.
- 5 Maurice J O'kane, Brendan Bunting, Margaret Copeland, et.al. 2013 Efficacy of self monitoring of blood glucose in patients with newly diagnosed type 2 diabetes (ESMON study): randomised controlled trial.
- 6 Park K (2000) Text Book of preventive and social medicine 16th edition M/s Banaridas Bhanot Publishers, Pg.No-215-227
- 7 Jacobs, M.E. and Black, J.E. text book of Medical Surgical Nursing.8th edition, Elsevier publisher, pg.no-1542-1553
- 8 Basavanthappa , Nursing Research,3rd edition, Jaypee brothers medical Publisher,Pg no-412- 423
- 9 www.pubmed.com