

# A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge Regarding Prevention of Diabetic Retinopathy among Diabetes Mellitus Clients Attending Diabetic Clinic at Selected Hospitals of Bagalkot, Karnataka

Shridhar G. Pujari<sup>1</sup>,

<sup>1</sup>Associate Professor,

Department of Medical Surgical Nursing,  
Shri B.V.V.Sangha's Sajjalashree  
Institute of Nursing Sciences,  
Navanagar, Bagalkot

Deelip S. Natekar<sup>2</sup>,

<sup>2</sup>Principal, Shri B.V.V.Sangha's

Sajjalashree Institute of Nursing  
Sciences, Navanagar, Bagalkot

Praveen S. Pateel<sup>3</sup>

<sup>3</sup>Associate Professor and HOD,  
Department of Nursing Foundation,  
Shri B.V.V.Sangha's Sajjalashree  
Institute of Nursing Sciences,  
Navanagar, Bagalkot

## Abstract

### ➤ *Background of the Study*

Diabetes mellitus is a common chronic disease and is a public health problem that affects all level of society. The blind population of India is estimated to be about 9-12 million which is, to be 25% of the world's blind population. The fact that 25% of the world's blind population is in India is a strong reason for imparting a proper education to diabetics regarding the prevention of diabetic retinopathy.

### ➤ *Methodology*

Pre-experimental research design with one group pre-post-test without control group was used with 50 clients through convenient sampling technique. Data was collected by Structured Questionnaire, & analysed using descriptive and inferential statistical in terms of mean, frequency distribution, percentage 't' test and chi-square test.

### ➤ *Results*

The overall findings reveal that post-test mean knowledge score 30.38 with SD  $\pm 2.53$  which is 84.3% of total score was more when compared to the pre-test mean knowledge score 18.2 with SD  $\pm 4.21$  which is 50.52% of total score. The overall effectiveness of VATP on prevention of diabetic retinopathy, mean score was 12.18 with SD  $\pm 1.68$  which is 33.83% of total score. Hence it indicates that VATP was effective in enhancing knowledge of clients regarding prevention of diabetic retinopathy.

### ➤ *Interpretation and Conclusion*

The study proved that VATP on knowledge regarding prevention of diabetic retinopathy among diabetes clients attended diabetic clinic was scientific, logical and cost effective strategy.

**Keywords:-** Effectiveness, Video Assisted Teaching Programme, Prevention of Diabetic Retinopathy, Knowledge, Socio-Demographic Variables.

## I. INTRODUCTION

According to W.H.O 2016 globally Diabetes is a huge and growing burden: 415 million adults were living with diabetes in 2015 and this number is expected to increase around 642 million or one in ten adults by 2040, one in two adults with diabetes is undiagnosed. Many people live with type 2 diabetes for a long period of time without being aware of their condition. By the time of diagnosis, diabetes complications may already be present. Up to 70% of type 2 diabetes cases can be prevented or delayed by adopting healthier lifestyles.<sup>1</sup>

According to WHO 2016 in India, 31.7 million people were affected by diabetes mellitus. This figure is estimated to rise around 79.4 million by 2030.<sup>2</sup>

Diabetes Mellitus can be defined as a group of metabolic diseases characterized by hyperglycaemia, with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both.<sup>3</sup>

Persons with diabetes are at higher risk of visual impairment than non-diabetic persons. Ocular complications are frequent and distressing and are becoming more common, because of the increasing longevity of diabetes. Diabetic retinopathy, cataract, and glaucoma are the potentially blinding ocular conditions associated with diabetes, however most blindness is caused by diabetic retinopathy.<sup>4</sup>

Worldwide, the prevalence of diabetic retinopathy rate has been estimated at 34.6% (93 million people). An estimates of the prevalence rate for vision –threatening diabetic retinopathy (VTDR) 10.2% (28 million people).<sup>5</sup>

The treatments include laser photocoagulation, intravitreal injections and vitrectomy surgeries. Because these treatments are aimed at preventing vision loss and retinopathy can be asymptomatic, it is important to identify and treat patients early in the disease. To achieve this goal, patients with diabetes should be routinely evaluated to detect the disease.

## II. STATEMENT OF THE PROBLEM

*“A Study To Assess the Effectiveness of Video Assisted Teaching Programme on Knowledge Regarding Prevention of Diabetic Retinopathy among Diabetes Mellitus Clients Attending Diabetic Clinic at Selected Hospitals of Bagalkot, Karnataka.”*

## III. OBJECTIVE OF THE STUDY

- To assess the knowledge regarding prevention of diabetic retinopathy among diabetes mellitus clients attending diabetic clinic at selected hospitals of Bagalkot.
- To assess the effectiveness of video assisted teaching programme on knowledge regarding prevention of diabetic retinopathy among diabetes mellitus clients attending diabetic clinic at selected hospitals of Bagalkot.
- To find out the association between post - test knowledge score on prevention of diabetic retinopathy with their selected socio- demographic variables.

## IV. HYPOTHESIS

- **H<sub>1</sub>:** The mean post test knowledge scores of diabetes mellitus clients exposed to video assisted teaching program on knowledge regarding prevention of diabetic retinopathy is significantly higher than mean pre test knowledge score at 0.005 level of significance.
- **H<sub>2</sub>:** There is a significant association between post test knowledge levels on prevention of diabetic retinopathy among diabetes mellitus clients with their selected socio-demographic variables.

## V. METHODOLOGY

### ➤ Research Approach

An evaluative approach was used for the present study.

### ➤ Research Design

pre experimental one group pre-test -post-test without control group design.

### ➤ Variables

Variables selected for the present study are:

#### • Dependent Variable

In this study, it refers to the Knowledge regarding prevention of diabetic retinopathy among diabetes mellitus clients.

#### • Independent Variable

In this study it refers to the Video assisted teaching program on knowledge regarding prevention of diabetic retinopathy among diabetes mellitus clients.

#### • Socio-Demographic Variables

In this study socio-demographic variables refers to selected characteristics of diabetes mellitus clients such as Age, Sex, Religion, Occupational status, Education status, Family history of diabetes, Source of information, Marital status, Family monthly income.

### ➤ Setting of the Study

The present study was conducted in Diabetic clinic at selected hospitals of Bagalkot.at Tulasigirish diabetes Hospital And diabetes Research foundation and Daddenavar hospital and research centre Bagalkot.

### ➤ Population

#### • Target Population

The target population for the study is diabetic mellitus clients attending diabetic clinics of Bagalkot district.

#### • Accessible Population

The accessible population for the study is diabetes mellitus clients attending diabetic clinic at selected hospitals of Bagalkot.

### ➤ Sample Size

The sample size for the present study is 50 diabetes mellitus clients attending diabetic clinic at selected hospitals of Bagalkot.

### ➤ Criteria for Selection of Sample

The study includes diabetes mellitus clients attending diabetic clinic who are,

- Available at the time of data collection.
- Willing to participate in the study.
- Who can speak and understand Kannada and English languages

### ➤ Exclusion Criteria

The study excludes diabetes mellitus clients attending diabetic clinic who are,

- Not willing to participate in the study.
- Clients with diabetes mellitus who are ill at the time of data collection.
- Sampling Technique

- Convenient Sampling technique.

➤ *Description of the Tools*

*Structured Organizational Commitment Questionnaire*

The instrument was divided into two parts:

- *Part – I*

It consists of 9 items regarding the demographic information of the subjects such as age, gender, religion, occupation, education, family history of DM, source of information, marital status, Family monthly income, relationship with the diabetes clients and source of knowledge regarding prevention of diabetic retinopathy among diabetes mellitus clients.

- *Part – II*

Data was collected by means of Structures questionnaire with Interview scheduled used. It consists of 36 knowledge items related to diabetes and prevention of diabetic retinopathy. These items were closed ended, multiple choice questions. The tool was made with 6 sections they are,

- ✓ SECTION A: The first section includes of eight questions; each question was carries 1 mark. It consists of knowledge questions regarding general aspects of information of diabetes like meaning, Definition, causes, types, symptoms. Investigation, treatment, complications of diabetes.
- ✓ SECTION B: The second section includes of nine questions; each question was carries 1 mark. It consists of knowledge questions regarding the blood sugar control by diet, exercise, acupressure and medication.
- ✓ SECTION C: The third section includes of four questions; each question was carries 1 mark. It consists of knowledge questions regarding monitoring of glucose level in blood and urine.
- ✓ SECTION D: The fourth section includes of three questions, each question was carries 1 mark, It consist of hypertension management.

- ✓ SECTION E: The fifth section includes nine questions, each question was carries 1 mark. it consists of knowledge questions regarding eye checkup.
- ✓ SECTION F: The sixth section include 3 questions; each question was carries 1 mark. It consists of knowledge questions regarding prevention of anemia.

➤ *Socio-demographic profile*

Age, Sex, Religion, Occupational status, Education status, Family history of diabetes, Source of information, Marital status, Family monthly income.

➤ *Data collection procedure*

Permission was obtained from the Dr, Tulasigirish diabetes Hospital And diabetes Research foundation and Daddenavar hospital and research centre Bagalkot. Ethical clearance was done. Consent was obtained from the participants.

Pre-test data was collected by researcher herself by using Structured closed ended questionnaire with interview schedule. Structured interview was done for each participant within 30-45 minutes.

Video assisted teaching program intervened with the areas like Diabetes & Prevention of diabetic retinopathy.

- General information about diabetes mellitus.
- Blood sugar control.
- Monitoring of glucose.
- Hypertension management.
- Eye checkup.
- Anemia prevention

Seven days after intervention, post test data was collected by using structure questionnaire with interview method, was completed within 45 days.

➤ *Plan of Data Analysis*

The data obtained was analyzed in terms of achieving the objectives of the study using descriptive and inferential statistics.

**VI. RESULTS**

Percentage wise distribution of study subjects according to levels of knowledge in pre-test and posttest.

➤ *Part-I: Comparison of Knowledge Level of Diabetes Mellitus Clients in Pre-Test and Post-Test.*

Level of knowledge	Pre – test		Post-test	
	No.of respondents	Percentage	No.of respondents	Percentage
Excellent	0	0%	38	76%
Good	10	20%	12	24%
Average	28	56%	0	0%
Poor	12	24%	0	0%
Very poor	0	0%	0	0%
Total	50	100	50	100

Table 1:- Assessment of knowledge level of clients in pre-test and post test

Knowledge wise comparison of study subjects in pre-test and post-test reveals the following results. In pre-test out of 50 subjects 10 (20%) had good knowledge followed by 28 (56%) had average knowledge followed by 12 (24%) subjects with poor knowledge no subjects had very poor knowledge

regarding prevention of diabetic retinopathy. However after VATP in post-test, 76% subject with excellent, 12% subjects with good, and no subjects had average and poor knowledge regarding prevention of diabetic retinopathy

➤ *Part-II: Area Wise Effectiveness of VATP on Knowledge Regarding Prevention of Diabetic Retinopathy.*

Knowledge area	Max. score	Pre-test (O1)		Post-test (O2)		Effectiveness (O2-O1)	
		Mean ± SD	Mean %	Mean ± SD	Mean %	Mean ± SD	Mean %
General Information about Diabetes mellitus	8	3.58±1.45	44.75%	6.6±1.10	82.5%	3.02±0.35	37.7%
Items on blood sugar control by diet, exercise, acupressure & medication.	9	5.12±1.39	56.8%	7.38±1.02	82%	2.26±0.37	25.1%
Items on monitoring of glucose level in blood & urine.	4	2.08±1.06	52%	3.5±0.58	87.5%	1.42±0.48	35.5%
Items on hypertension management.	3	1.48±0.88	49.33%	2.56±0.64	85.33%	1.08±0.24	36%
Items on eye check-up.	9	4.3±1.66	47.77%	8±1.01	88.88%	3.7±0.65	41.1%
Items on prevention of anaemia.	3	1.64±0.85	54.66%	2.54±0.61	84.66%	0.9±0.24	30%
Items on eye check-up.	9	4.3±1.66	47.77%	8±1.01	88.88%	3.7±0.65	41.1%
Items on prevention of anaemia.	3	1.64±0.85	54.66%	2.54±0.61	84.66%	0.9±0.24	30%
Total	36	18.2±4.21	50.55%	30.38±2.53	84.3%	12.18±1.68	33.83%

Table 2:- Area wise mean, S.D and mean percentage of the knowledge scores in pre-test and post-test. (N=50)

Area wise comparison of mean and standard deviation of the knowledge scores of the pre-test and post-test reveals an increase in the mean knowledge score of the diabetes mellitus clients after VATP.

In the area of knowledge on “General aspects regarding diabetes mellitus”, pre-test mean knowledge score was 3.58 with SD ±1.45 which was 44.75% of total score, whereas post-test mean knowledge score was 6.6 with SD ±1.10 which was 82.5% of total score. The effectiveness of VATP on General aspects regarding diabetes mellitus, mean score was 3.02 with SD ±0.35 which is 37.7% of total score.

In the area of knowledge on “blood sugar control by diet, exercise, acupressure & medication”, pre-test mean knowledge score was 5.12 with SD ±1.39 which is 56.8% whereas post-test mean knowledge score was 7.38 with SD ±1.02 which is 82%. The effectiveness of VATP on “blood sugar control by diet, exercise, acupressure & medication”, mean score was 2.26 with SD ±0.37 which is 25.1% of total score.

In the area of knowledge on “monitoring glucose level in blood & urine”, pre-test mean knowledge score was 2.08 with SD ±1.06 which is 52% of total score whereas post-test mean knowledge score was 3.5 with SD ±0.58 which is 87.5% of total score. The effectiveness of VATP on monitoring glucose level in blood & urine, mean score was 1.42 with SD ±0.48 which is 35.5% of total score.

In the area of knowledge on “hypertension management”, pre-test mean knowledge score was 1.48 with

SD ±0.88 which is 49.33% of total score whereas post-test mean knowledge score was 2.56 with SD ±0.64 which is 85.33% of total score. The effectiveness of VATP on hypertension management, mean score was 1.08 with SD ±0.24 which is 36% of total score.

In the area of knowledge on “eye check-up”, pre-test mean knowledge score was 4.3 with SD ±1.66 which is 47.7% of total score whereas post-test mean knowledge score was 8 with SD ±1.01 which is 88.88% of total score. The effectiveness of VATP on eye check-up, mean score was 3.7 with SD ±0.65 which is 41.1% of total score.

In the area of knowledge on “prevention of anaemia”, pre-test mean knowledge score was 1.64 with SD ±0.85 which is 54.66% of total score whereas post-test mean knowledge score was 2.54 with SD ±0.61 which is 84.66% of total score. The effectiveness of VATP on prevention of anaemia, mean score was 0.9 with SD ±0.24 which is 30% of total score.

The overall findings reveal that the post-test mean knowledge score 30.38 with SD ±2.53 which is 84.3% of total score was more when compared to the pre-test mean knowledge score 18.2 with SD ±4.21 which is 50.52% of total score. The overall effectiveness of VATP on prevention of diabetic retinopathy, mean score was 12.18 with SD ±1.68 which is 33.83% of total score. Hence it indicates that the VATP was effective in enhancing the knowledge of diabetes mellitus clients regarding prevention of diabetic retinopathy

➤ *Part-III: Testing of Hypothesis:*

retinopathy among diabetes mellitus clients attending diabetic clinic.

To evaluate the effectiveness of video assisted teaching programme module, a research hypothesis was formulated.

Paired ‘t’ test was used to find out the significance of the differences between the pre-test knowledge and post-test knowledge scores of the diabetes mellitus clients attending diabetic clinic.

- H1: - There will be significant differences between pretest and post test knowledge scores of prevention of diabetic

Test	Mean	Std. Error	Mean Diff	SD Diff	Paired t-value	Table value
Pre-test (x1)	18.2	0.63	12.18	1.67	18.88	2.010
Post-test(x2)	30.38					

Table 3:- Significant difference between the pre-test knowledge and post-test knowledge scores of diabetes mellitus clients attending diabetic clinic.

As the calculated t value (18.88) was much higher than table ‘t’ value (2.010) the hypothesis: **H1** -there is a significant difference between the pre-test knowledge and post-test knowledge scores of the clients attending diabetic clinic is accepted. Findings revealing the presence of significant

difference between pre-test and post-test knowledge scores, hence the video assisted teaching programme on prevention of diabetic retinopathy which is prepared by the researcher was proved to be effective (Table 6.3).

➤ *Part IV: Association between post-test knowledge scores and selected socio demographic variables*

SL. NO	Socio demographic variables	Df	Chi-square value	Table value	Level of significance	Significant
1	Age	1	0.069	3.84	0.05	Not significant
2	Gender	1	2.424	3.84	0.05	Not significant
3	Religion	1	0.034	3.84	0.05	Not significant
4	Educational status	1	3.209	3.84	0.05	Not significant
5	Occupation	1	2.585	3.84	0.05	Not significant
6	Family income	1	1.367	3.84	0.05	Not significant
7	Marital status	1	0.021	3.84	0.05	Not significant
8	Family history of DM	1	0.027	3.84	0.05	Not significant
9	Source of information	1	1.389	3.84	0.05	Not significant

Table 4:- Association between post-test knowledge scores and selected socio demographic variables

Chi square was calculated to find association between post knowledge scores of diabetes mellitus clients with their selected socio demographic variables by using 2x2 contingency table.

There is no significant association was found between the post-test knowledge scores of prevention of diabetic retinopathy among diabetes mellitus clients attending diabetic clinic and their socio-demographic variables such as age, gender, religion, education, occupation, family monthly income, marital status, family history of DM , source information, Thus **H2** stated is rejected. (Table 6.4).

**VII. DISCUSSION**

Findings revealed that out of 50 subjects, 6 % of the subjects belongs to age group of below 35 years, 14% of the subjects belongs to the age group 36-45, 22% of the subjects belongs to the age group 46-55, followed by 36% in the age group of 56-65 years, 22% were more than 65 age and above, 52% of subjects were male and remaining 48% were females. The elderly people are commonly accompanied by the male, so more training programmes can be provided in sub centers levels to improve their knowledge. 52% of subjects were from Hindu, 30% of subjects were from Muslim, and remaining

18% were from Christian & others. It resembles according to the Indian government study, more the cases identified in Hindu religion. 36% of the subjects had no formal education, 30% up to primary education, 30% had secondary education, 4% had college level and above. Less than average clients have no formal education so there is a chance for clients to have less knowledge regarding prevention of diabetic retinopathy. 22% subjects were labor, 2% subjects were Gov. employed, 20% were private employed, and 4% were Agriculture, 2% were business, 44% were house wife, remaining 6% of the subjects were retired from service. 8% subjects had an income below Rs 3000/-, 58% subjects had an income between 3000/---6000/-, 20% subjects had an income between 6001/--9000/-, followed by 12% subjects with income between Rs. 9001/--12000/-, 2% had Rs 12000/- and above. Average of clients have income Rs. 3000/-6000/. 2% subjects were unmarried, 82% of subjects were married, 12% subjects belong to widow/ widower, and remaining 4% were divorced/separated. 46% of subjects are having family history of DM. and remains 52% of subjects are not having family history of DM. Source of information 2% from mass media, 8% from friends, 6% from family members, and remaining 84% of subjects knows information from health professionals.

In pre-test out of 50 subjects 10 (20%) had good knowledge followed by 28 (56%) had average knowledge followed by 12 (24%) subjects with poor knowledge no subjects had very poor knowledge regarding prevention of diabetic retinopathy. However after VATP in post-test, 76% subject with excellent, 12% subjects with good, and no subjects had average and poor knowledge regarding prevention of diabetic retinopathy.

The overall findings reveal that the post-test mean knowledge score 30.38 with SD  $\pm 2.53$  which is 84.3% of total score was more when compared to the pre-test mean knowledge score 18.2 with SD  $\pm 4.21$  which is 50.52% of total score. The overall effectiveness of VATP on prevention of diabetic retinopathy, mean score was 12.18 with SD  $\pm 1.68$  which is 33.83% of total score.

Hence it indicates that the VATP was effective in enhancing the knowledge of diabetes mellitus clients regarding prevention of diabetic retinopathy.

Chi square was calculated to find association between post knowledge scores of diabetes mellitus clients with their selected socio demographic variables by using 2x2 contingency table. There is no significant association was found between the post-test knowledge scores of prevention of diabetic retinopathy among diabetes mellitus clients attending diabetic clinic and their socio-demographic variables such as age, gender, religion, education, occupation, family monthly income, marital status, family history of DM, source information regarding prevention of diabetic retinopathy.

## VIII. CONCLUSION

Based on the analysis of the findings of the study, the following inferences were drawn. The overall effectiveness of VATP on prevention of diabetic retinopathy, knowledge of clients regarding prevention of diabetic retinopathy.

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## CONFLICT OF INTEREST

Author has no conflict of interest.

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