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A Study to Assess the Effectiveness of Educational Module on Knowledge and Practice Regarding Selected Side Effects of Chemotherapy and its Management Among Clients with Oral Cancer in Selected Cancer Hospitals of Bagalkot

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Abstract **Original Research Article**

Background of the Study*:** Cancer begins when cells in a part of the body start to grow out of control. There are many kinds of cancer, but they all start because of out-of-control growth of abnormal cells. Today, millions of people are living with cancer or have had cancer. Oral cancer appears as a growth or sore in the mouth that does not go away. About 50,000 people in the U.S. get oral cancer each year, 70% of them men. Oral cancer includes cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palate, sinuses, and pharynx (throat. It can be life-threatening if not diagnosed and treated early. Side effects that occur during chemotherapy treatment are Nausea, Vomiting, Diarrhea, Hair loss, Loss of appetite, Fatigue, Fever, Mouth sores, Pain, Constipation, Easy bruising and Bleeding. The side effects of chemotherapy generally depend on the type of therapy being offered. Most chemotherapy side effects cease after treatment. Although uncommon, some treatments may produce long-term effects. The management of side effects of chemotherapy may include depending on the severity of side effects. ***Aim*:** To find out the relationship between knowledge and practice with their selected socio demographic variables among clients with oral cancer and to find out the association between knowledge and practice with their selected socio demographic variables among clients with oral cancer. ***Methods*:** The research design for this study was a Quasi -experimental, i.e. one group pre-test post test design was adopted for the present study. The sample includes 50 oral cancer patients from selected hospitals of Bagalkot. Non probability convenience sampling technique Was used for the study. Data collected using knowledge and practice questionnaire & analyzed using descriptive and inferential statistics. ***Results: The mean percentage of knowledge scores of the cancer patients in the pre-test was 11.58with mean and SD (3.89±1.98), whereas the mean percentage of knowledge scores in post-test was 22.2% with mean and SD (8.54±1.30). The paired 't' test showed that there is significant difference in the knowledge of cancer patients regarding selected side effects of chemo therapy after the administration of education module. ***Conclusion*:** A significant difference was found between the pre-test and post-test knowledge scores of admitted oral cancer patients. The study showed that education module was effective in improving the knowledge and practice of oral cancer patients on selected side effects of chemo therapy and its management.

Keywords: Effectiveness, cancer patients, chemo therapy.

INTRODUCTION

Human body is composed of millions of tiny cells, each a self-contained living unit. Normally, each cell coordinates with the others that compose tissues and organs of your body. In other words, cancer is a disease characterized by uncontrolled, uncoordinated and undesirable cell division [1]. The major types of cancer are carcinoma, sarcoma, melanoma, lymphoma, and leukemia. Carcinomas, the most commonly diagnosed cancers originate in the skin, lungs, breasts, pancreas, and other organs and glands. Lymphomas are cancers of lymphocytes. Leukemia is cancer of the blood [2]. Cancer is managed in a multidisciplinary team setting to improve outcomes (quality of life and prolong the person's life) of the patient and decrease the morbidity

[3]. Oral cancer is a malignant neoplasia which arises on the lip or oral cavity. Is traditionally defined as a squamous cell carcinoma (OSCC), because in the dental area, 90% of cancers are histological originated in the squamous cells. It has different levels of differentiation and a propensity for lymph node metastasis [4]. The goal of chemotherapy is to inhibit the growth of cancer cells while causing as little effect on normal cells as possible. The most effective dose is often very close to the toxic dose. Chemotherapy drugs can be lifesaving to our patients but dangerous to those who are handling and administrating the drugs [5]. There are many types of cancer treatment are available. Different treatments for cancer are used alone or in combination. Most cancers are treated with surgery, chemotherapy and/or radiation therapy (also known as radiotherapy) [6]. Traditional chemotherapeutic agents are cytotoxic by means of interfering with cell division (mitosis) but cancer cells vary widely in their susceptibility to these agents. To a large extent, chemotherapy can be thought of as a way to damage or stress cells, which may then lead to cell death if apoptosis is initiated. Many of the side effects of chemotherapy can be traced to damage to normal cells that divide rapidly and are thus sensitive to anti-mitotic drugs [7]: The side effects of chemotherapy include diarrhea, dry mouth, mouth sores, fatigue, and hair loss, a loss of appetite, nausea, and vomiting etc [8].

METERIAL AND METHODS

STUDY DESIGN: Our research shows that the knowledge of the experts does not differ semantically, but that the information is more strongly connected to each other. The experiments conducted have shown that the size of words and the retrieval speed of words from memory varies between individuals with different background knowledge. The results of our study could also help to provide better, personalized instructions to users in different hospitals and establish a more interactive dialog between the user and an intelligent tutoring system.

SETTING OF THE STUDY: Setting refers to physical location and condition in which the data is gathered. The study will be conducted in the cancer units of selected hospitals of Bagalkot.

PARTICIPANTS: The oral cancer patient who are attending the selected cancer hospitals of Bagalkot, and who met the inclusion criteria were selected as the sample for the study.

SAMPLE SIZE: The sample size comprises of 30 clients with oral cancer admitted in the selected cancer hospitals of Bagalkot.

SAMPLING TECHNIQUE: Sampling is the process of selecting a group of people, events, behaviors or other elements on which the study is conducted. Non probability convenience sampling technique used for the present study.

DESCRIPTION OF THE TOOL

After a thorough review of literature related to the topic and considering the suggestions of experts the format of the structured Questionnaire has three sections or parts.

Part I: It Consists of items seeking information regarding socio-demographic characteristics of oral cancer patients admitted in cancer units of selected hospitals, such as, Age, Gender, Religion, Family income, Education, Occupation, diet, Area of residence, source of knowledge and Habits,

Part II: It Consists of 30 items pertaining to knowledge regarding selected side effecters of chemotherapy among oral cancer patients admitted in cancer units of selected hospitals of Bagalkot.

Part III: It Consists of 20 items pertaining to practice regarding selected side effecters of chemotherapy among oral cancer patients admitted in cancer units of selected hospitals of Bagalkot.

DATA COLLECTION PROCEDURE

The data collection was done among oral cancer patients admitted in cancer units of selected hospitals of Bagalkot. Permission was obtained from the heads of the selected hospital before data collection. Written consent was obtained from the subjects.50 clients with oral cancer undergoing chemotherapy was selected on the basis of Non probability sampling technique. Then the investigator did a pretest on the level of knowledge and practice about selected side effects of chemotherapy among oral cancer patients. Structured questionnaire was used for assessing the level of knowledge and self structured practice scale for assessing the level of practice. Then the Education Module intervention was administered to the subjects with lecture, video clipping, pamphlets and chart for 20 minutes. Then the post test level of knowledge and practice of the subjects was assessed after 7 days with the help of same questionnaire and checklist for practice.

DEVELOPMENT OF EDUCATION MODULE

The Education module was developed according to the objectives prepared. The investigator prepared the overall content of education module using education module and charts as AV aids. The developed education module was given to the experts to establish content validity. Experts were asked to give their opinion and suggestions about the content of education module. The final draft was prepared.

DESCRIPTION OF EDUCATION MODULE

The content area of the education module was divided into definitions of oral cancer, causes, clinical manifestation, diagnostic evaluation, side effects of chemotherathy, and management of side effects. Based

on the suggestions of the experts, after validity of the findings final draft was prepared.

RESULTS

The collected information was organized and presented in four parts:
Part I, Part II, Part III and Part IV.

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Part I: Description of socio-demographic characteristics of subjects

Part II: To evaluate the effectiveness of education module on knowledge and practice regarding selected side effects of chemotherapy and its management.

Part III: To find out the relationship between knowledge and practice regarding selected side effects of chemotherapy and its management**.**

Part IV: To find out the association between knowledge and practice regarding selected side effects of chemotherapy and its management with their selected socio demographic variables among clients with oral cancer.

SECTION I: Description of socio-demographic characteristics.

Table 5.1: Frequency and percentage distribution of socio-demographic characteristics of sample, N=50

Variables	Frequency	Percentage
1. AGE		
a. 30-40	6	12%
b. 41-50	22	42%
c. 51-60	14	32%
d. 60& above	8	14%
2. GENDER		
a. Male	30	60%
b. Female	20	40%
3. EDUCATION		
a. No formal education	3	6%
b. Primary	12	24%
c. Secondary	11	22%
d. Degree& above	16	32%
e. PG &above	8	16%
4. RELIGI0N		
a. Hindu	29	58%
b. Muslim	16	32%
c. Christian	3	6%
d. Other(specify)	2	4%
5. FAMILY MONTHLY INCOME		
a. Below Rs 5000/-	12	24%
b. Rs.5001/- to 10000/-	25	50%
c. RS.10001/- to 15000/-	3	6%
d. Rs.15001/- & above	10	20%
6. DIET		
a. Vegetarian	24	48%
b. Nonvegetarian	26	52%
7. OCCUPATION		
a. Housewife	16	32%
b. Privet employee	12	24%
c. Govt employee	2	6%
d. Farmer	10	20%
e. Business	9	18%
8. AREA OF RESIDENCE		
a. Urban	26	52%
b. Rural	9	18%
c. Semiuraban	9	18%
d. Slum	6	12%
9. SOURCES OF KNOWLEDGE		
a. Social media	6	12%

b. Health worker	30	60%
c. Book & magazine	7	14%
d. Other sources	7	14%
10. HABITS		
a. Alcohol	8	16%
b. Smoking	32	64%
c. Drug addiction	0	0%
d. Other	10	20%

SECTION II: To evaluate the effectiveness of education module on knowledge and practice regarding selected side effects of chemotherapy and its management among the clients with oral cancer.

Table (A) Comparison of pretest and posttest knowledge scores regarding selected side effects of chemotherapy and its management by dependent t test

Table (A): Mean, SD and paired 't' test of Pre and Post level of knowledge and practice regarding selected side effects of chemotherapy and its management among the clients with oral cancer

Knowledge	Mean	SD	Mean Diff.	SD Diff.	Paired 't' test	Table value
Pretest	11.58	3.89	10.62	4.65	22.62	1.96
Post test	22.2	8.54				

As the calculated 't' value (22.62) was much higher than table 't' value (1.96) for the Hypothesis:

H_1: The post intervention mean knowledge scores of clients with oral cancer regarding selected side effects of chemotherapy and its management will be higher than that of their pre-intervention mean score.

Hence it is clear that there is a statistically significant difference between mean pre-test and mean post-test knowledge scores of oral cancer patients indicating the effectiveness of education module in enhancement of knowledge regarding selected side effects of chemotherapy and its management., Hence the Education module proved to be effective.

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Table (B) Comparison of pretest and posttest practice scores regarding selected side effects of chemotherapy and its management by dependent t test.

Table (B): Mean, SD and paired 't' test of Pre and Post level of practice regarding selected side effects of chemotherapy and its management among the patients with oral cancer

Practice	Mean	SD	Mean Diff.	SD Diff.	Paired 't' test	Table value
Pretest	22.68	4.56	17.48	1.78	31.29	1.96
Posttest	40.16	6.34				

As the calculated' value (31.29) was much higher than table 't' value (1.96) for the Hypothesis:

H_2: The post intervention mean practice scores of clients with oral cancer regarding selected side

effects of chemotherapy and its management will be higher then that of their pre intervention mean score.

Hence it is clear that there is a statistically significant difference between mean pre-test and mean post-test practice scores of oral cancer clients indicating the effectiveness of education module in enhancement of practice regarding selected side effects of chemotherapy and its management. Hence the Education module proved to be effective.

SECTION IV: Association between post-test knowledge score of oral cancer client regarding side effects of chemotherapy and its management with selected socio-demographic variables.

Table 3: Association between post-test knowledge score of oral cancer clients regarding side effects of chemotherapy and its management with their selected socio-demographic variables, N = 50

Sl. No	Socio-Demographic Variables	DF	Chi- square	Table value	P value	Association
1	Age	1	0.971	3.84	0.05	Not significant
2	Gender	1	1.175	3.84	0.05	Not significant
3	Educational status	1	3.764	3.84	0.05	Not significant
4	Religion	1	0.773	3.84	0.05	Not significant
5	Family income per Month	1	11.797	3.84	0.05	Significant
6	Diet	1	0.953	3.84	0.05	Not significant
7	Occupational status	1	0.031	3.84	0.05	Not significant
8	Area of residence	1	5.821	3.84	0.05	Significant
9	Source of Knowledge	1	0.273	3.84	0.05	Not significant
10	Habits	1	0.396	3.84	0.05	Not significant

Chi-square and Yates correction was calculated to find out the association between post test knowledge and practice scores of oral cancer clients with their selected socio demographic variables by using contingency table.

Calculated Chi-square value is lesser than table value for socio demographic variables Age (χ2=0.971, P=0.05), Gender (χ2=1.175, P=0.05), Educational status (χ2= 3.764, P= 0.05), Religion (χ2=0.773, P= 0.05), Diet (χ2=0.953, P=0.05), Occupation (χ2=0.031, P=0.05), Source of Knowledge (χ2=0.273, P=0.05), Habits (χ2=0.396, P=0.05) in post test calculated chi-square value and Yates correction value is lesser than the table value for socio demographic variables, therefore **H_4**: is rejected for the above socio demographic variables, and Calculated Chi-square value is more than table value for socio demographic variables family income (χ2=11.797, P= 0.05), and area of residence (χ2=5.821, P= 0.05), in post test calculated chi-square value is more than the table value for socio demographic variables, therefore **H_4**: is accepted for the these socio demographic variables.

SECTION V: Association between post-test practice score of oral cancer clients regarding side effects of chemotherapy and its management with selected socio-demographic variables.

Table 4: Association between post-test knowledge and practice score of oral cancer clients regarding side effects of chemotherapy and its management with selected socio- demographic variables, N = 50

Sl. No	Socio-Demographic Variables	DF	Chi- square	Table value	P value	Association
1	Age	1	1.801	3.84	0.05	Not significant
2	Gender	1	0.025	3.84	0.05	Not significant
3	Educational status	1	0.005	3.84	0.05	Not significant
4	Religion	1	1.729	3.84	0.05	Not significant
5	Family income per Month	1	0.034	3.84	0.05	Not significant
6	Diet	1	0.079	3.84	0.05	Not significant
7	Occupational status	1	0.025	3.84	0.05	Not significant
8	Area of residence	1	0.079	3.84	0.05	Not significant
9	Source of knowledge	1	0.521	3.84	0.05	Not significant
10	Habits	1	1.343	3.84	0.05	Not significant

Chi-square and Yates correction was calculated to find out the association between post test practice scores of oral cancer clients with their selected socio demographic variables by using contingency table.

Calculated Chi-square and Yates correction value is lesser than table value for socio demographic variables Age (χ 2=1.801, P=0.05), Gender (χ2=0.025, P=0.05), Educational status (χ2= 0.005, P=0.05), Religion (χ2=1.729, P=0.05), Occupational status (χ2=0.034, P=0.05), Family income per month

(χ2=0.034, P=0.05), Place of residence (χ2=0.079, P=0.05), Source of knowledge (χ2=0.521, P=0.05), Habits (χ2=1.343, P=0.05), Diet (χ2=0.079, P=0.05), in post test calculated Chi-square and Yates correction value is lesser than the table value for socio demographic variables, therefore **H5**: is rejected for all socio demographic variables.

Section III: To find out the relationship between knowledge and practice of oral cancer client regarding side effects of chemotherapy and its management.

Karl Pearson correlation coefficient test was used to calculate relationship between knowledge and practice of oral cancer clients regarding side effects of chemotherapy and its management.

Significant co-relation between knowledge and practice of oral cancer clients

As the calculated 'r' value (-0.1835) for the Hypothesis **H3**: There will be a relationship between knowledge and practice of oral cancer clients. Hence it is clear that there is a statistically negative co-relation between knowledge and practice of oral cancer clients. Indicating that there is no a strong positive co-relation between knowledge and practice of oral cancer clients. Hence calculated "r" is (-0.1835) there is a negative correlation between knowledge and practice of oral cancer clients. Therefore **H3**: is rejected. There will be a significant relationship between the knowledge and practice about selected side effects of chemotherapy among clients with oral cancer socio-demographic variable.

DISCUSSION

Part I: Description of socio-demographic characteristics of subjects

- ✓ Majority (42%) of the oral cancer patients were 41-50 years old, 32% of cancer patients were between the age group of 51-60 years old, and 14 % of them were between the age group of 60 years and above old. Only 12% of oral cancer patients were between the age group of 30-40 year.
- ✓ Majority of (60%) of cancer patients were Males and 40% of them were females.
- ✓ Majority 16(32%) of the oral cancer patient completed Degree and above,12(24%) completed primary education,11(22%), then 8(16%) PG and above education, only 3 (6%) were completed no formal education.
- ✓ Majority of 29 (58%) oral cancer patients were Hindu, 16(32%) were muslim,3(6%) were Christian and only 2(4%) were other religion.
- ✓ Majority of 25(50%) subjects were having Rs. 5001-10,000/- of income, 12(24%) subjects were having below Rs.5,000/- of income, then10(20%) subjects were having Rs15,001- & above and only 3(6%) subjects were having Rs10,001/--15,001/- of income.
- ✓ Majority of 26(52%) subjects were vegetarian and 24(48%) were non vegetarian.
- ✓ Majority of 16(32%) of cancer patients were Housewife,12(24%) were Private employee, 10(20%) were farmers, 9(18%) were businessmen and only 3(6%) were government workers.
- ✓ Majority of 26(52%) oral cancer patients were belongs to urban area, 9(18%) were belongs to rural area, 9(18%) were belongs to semi urban area, and only 6(12%) were belongs to slum area.
- ✓ Majority of oral cancer patients 30(60%) had information from health workers, 7(14%) had from books and magazines, 7(14%) had from other sources and 6(12%) had from social media.
- ✓ Majority of 32(62%) oral cancer patients were smokers, 10(20%) had other habits, 8(16%) were alcohols and nobody had drug addiction.

SECTION II: Assessment of knowledge regarding selected side effects of chemotherapy and its management among oral cancer patients

Pre-test reveals that out of 50 oral cancer patients, highest percentage (72%) of the oral cancer patients had poor knowledge, (28%) of subjects had average knowledge, and no one had got excellent knowledge, good knowledge, and very poor knowledge. Hence it reveals that majority percentage (72%) of oral cancer patients have poor knowledge.

SECTION III: Assessment of Practice regarding selected side effects of chemotherapy and its management among oral cancer patients.

Pre-test reveals that out of 50 oral cancer patients, highest percentage (88%) of oral cancer patients had inadequate practice, (12%) of oral cancer patients had adequate practice. Hence it reveals that majority percentage (88%) of oral cancer patients have inadequate practice regarding selected side effects of chemotherapy and its management.

SECTION II: To evaluate the effectiveness of Education Module on knowledge and attitude regarding selected side effects of chemotherapy and its management among oral cancer patients.

PART-I: Comparison of knowledge level of oral cancer patients in pre-test and post-test.

Knowledge wise comparison of oral cancer in pre-test reveals that the following results. In pre-test, out of 50 oral cancer patients, highest percentage (72%) of had poor knowledge, (28%) of oral cancer patients had average knowledge, No one have excellent, good and very poor knowledge regarding selected side effects of chemotherapy and its management.

However after implementation of Education module (post-test) highest percentage (66%) of oral cancer patients had good knowledge, (24%) of oral cancer patients had excellent knowledge, and followed by lowest percentage (10%) of cancer patients with average knowledge. No oral cancer patients had, poor and very poor knowledge regarding selected side effects of Chemotherapy and its management.

PART-II: Comparison of Practice scores of Oral cancer patients in pre-test and post-test.

Practice wise comparison of oral cancer patientsin pre-test reveals that the following results. In pre-test, out of 50oral cancer patients, highest percentage (88%) of oral cancer patients had inadequate practice, (12%) of oral cancer patients had adequate practice regarding selected side effects of chemotherapy and its management.

However after implementation of Education module (post-test) highest percentage (68%) of oral cancer had adequate practice, (32%) of oral cancer patients had inadequate practice regarding selected side effects of chemotherapy and its management.

The study findings were supported by the study done by Geetha (2007) to assess the knowledge and attitude of cancer patients regarding management of selected side effects of chemotherapy before and after structured teaching programme. The study results showed that post test level of knowledge score 20.2(±1.8) and post test level of attitude score was36.2 (±6.93) highly significant after administration of structured teaching programme among cancer patients.

PART-III: Testing of hypothesis

As the calculated 't' value (22.62) was much higher than table 't' value (2.009) for the Hypothesis: **H_1**- The post intervention mean knowledge scores of clients with oral cancer regarding selected side effects of chemotherapy and its management will be higher than that of their pre-intervention mean score..

Hence it is clear that there is a statistically significant difference between pre-test and post-test knowledge scores of oral cancer patients indicating the effectiveness of education module in enhancement of knowledge of oral cancer patients, Hence the Education module proved to be effective.

As the calculated 't' value (31.29) was much higher than table 't' value (2.009) for the Hypothesis: **H_2**- The post intervention mean practice scores of clients with oral cancer regarding selected side effects of chemotherapy and its management will be higher than that of their pre intervention mean score.

Hence it is clear that there is a statistically significant difference between pre-test and post-test practice scores of oral cancer patients indicating the effectiveness of Education module to modified practice of oral cancer patients, Hence the education module proved to be effective.

SECTION IV: A. To find out the relationship between knowledge regarding selected side effects of chemotherapy and its management

Chi-square and Yates correction was calculated to find out the association between post test knowledge and practice scores of oral cancer clients with their selected socio demographic variables by using contingency table.

Calculated Chi-square value is lesser than table value for socio demographic variables Age ($\chi 2$=0.971, P=0.05), Gender ($\chi 2$=1.175, P=0.05), Educational status ($\chi 2$= 3.764, P= 0.05), Religion ($\chi 2$=0.773, P= 0.05), Diet ($\chi 2$=0.953, P=0.05), Occupation ($\chi 2$=0.031, P=0.05), Source of Knowledge ($\chi 2$=0.273, P=0.05), Habits ($\chi 2$=0.396, P=0.05) in post test calculated chi-square value and Yates correction value is lesser than the table value for socio demographic variables, therefore **H_4**: is rejected for the above socio demographic variables, and Calculated Chi-square value is more than table value for socio demographic variables family income ($\chi 2$=11.797, P= 0.05), and area of residence ($\chi 2$=5.821, P= 0.05), in post test calculated chi-square value is more than the table value for socio demographic variables, therefore **H_4**: is accepted for the these socio demographic variables.

SECTION IV: B. To find out the association between knowledge and practice regarding selected side effects of chemotherapy and its management with their selected socio demographic variables among clients with oral cancer.

Chi-square and Yates correction was calculated to find out the association between post test practice scores of oral cancer clients with their selected socio demographic variables by using contingency table.

Calculated Chi-square and Yates correction value is lesser than table value for socio demographic variables Age (χ 2=1.801, P=0.05), Gender ($\chi 2$=0.025, P=0.05), Educational status ($\chi 2$= 0.005, P=0.05), Religion ($\chi 2$=1.729, P=0.05), Occupational status ($\chi 2$=0.034, P=0.05), Family income per month ($\chi 2$=0.034, P=0.05), Place of residence ($\chi 2$=0.079, P=0.05), Source of knowledge ($\chi 2$=0.521, P=0.05), Habits ($\chi 2$=1.343, P=0.05), Diet ($\chi 2$=0.079, P=0.05), in post test calculated Chi-square and Yates correction value is lesser than the table value for socio demographic variables, therefore **H5**: is rejected for all socio demographic variables.

The study findings were supported by the study done by Gould and Chamberlain (2007) conducted a

study to evaluate effectiveness of structured teaching programme designed to promote management of side effects of chemotherapy. The study result shows that if patients knowledge increases means, their practice also increased.

CONCLUSION

This chapter presents the conclusion drawn, implications, limitations, suggestion, and recommendations.

The main focus of this study was to assess the effectiveness of education module on knowledge and practice regarding selected side effects of chemotherapy and its management in the selected cancer hospitals of Bagalkot.

The post test score of knowledge and practice were highly significant when compared to pretest score. Thus the present study shows that the Education module was effective in improving the knowledge and practice towards selected side effects of chemotherapy and its management.

A negative correlation was found between the knowledge and practice score both in pretest and post test when tested using the Karl Pearson Correlation Coefficient. This shows that the improvement in knowledge about selected side effects of chemotherapy and its management. Hence the formulated hypothesis was not accepted.

The association between the demographic variables and the pretest knowledge and practice was find using the $\chi 2$ test.

Contribution of Authors

Research Concept: Uddavva M Harugoppa Associate Prof. Mr. Prafulla Kumar
Research Design: Uddavva M Harugoppa Associate Prof. Mr. Prafulla Kumar
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