# “EFFECTIVENESS OF VIDEO ASSISTED EDUCATIONAL PROGRAM REGARDING PREVENTION OF ORAL MUCOSITIS IN TERMS OF KNOWLEDGE AND EXPRESSED PRACTICES AMONG PATIENTS RECEIVING RADIOTHERAPY AT AIIMS, JODHPUR.”

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**All India Institute of Medical Sciences, Jodhpur**

**In partial fulfilment of the requirement for the degree**

Master of Science in Nursing

(Oncology Nursing)

**By**

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**[2021]**

# DECLARATION BY CANDIDATE

I hereby declare that the thesis entitled “Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, jodhpur” is a bonafide work carried out by me under the guidance of Mrs. Vandna Pandey, Assistant Professor, College of Nursing, All India Institute of Medical Sciences (AIIMS), Jodhpur (Rajasthan). No part of this thesis has formed the basis for the award of any degree previously.

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# CERTIFICATE BY THE GUIDE

This is to certify that the thesis entitled “Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, jodhpur” is a bonafide work done by Ms. Jyoti Rathore in partial fulfilment of requirement for the award of M.Sc. (Nursing) degree of the All India Institute of Medical Sciences, Jodhpur under the guidance of undersigned. She has carried out the work at College of Nursing, All India Institute of Medical Sciences, Jodhpur.

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This is to certify that the thesis entitled “Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, jodhpur” is a bonafide research work done by Jyoti Rathore under the guidance of Mrs. Vandna Pandey, Assistant Professor, College of Nursing, All India Institute of Medical Sciences (AIIMS), Jodhpur (Rajasthan).

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***"One Cannot Reach The Real Point Of Factual Knowledge Without Being Helped By The Right Person Who Is Already Established In That Knowledge"***

***Bhagwad – Geeta***

*Gratitude can never be expressed in words but this is only the deep appreciation which makes the words to flow from one's in her heart.*

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*Jyoti Rathore*

*Date:*

# LIST OF ABBREVIATIONS USED

| Abbreviation | Full form |
|---|---|
| AIIMS | All India Institute of Medical Sciences |
| cGy | Centigray |
| DNA | Deoxyribonucleic acid |
| HSV | Herpes Simplex Virus |
| LINAC | Linear Accelerator |
| RT | Radiation Therapy |

# ABSTRACT

**Introduction:** Oral mucositis refers to erythematosus and ulcers in the oral mucosa observed in patients with head and neck cancer receiving radiotherapy. It is acute complication or side effect of radiotherapy. This condition influence almost all patients of head and neck cancer receiving Radiotherapy (RT). Severe oral mucositis may outcome in the parenteral or enteral nutrition need due to dysphagia that is difficulty in swallowing and systemic analgesics and topical analgesics like lidocaine due to pain, expand risk for infections in the body due to the disorganised oral mucosa barrier, prolonged and unscheduled hospital stays as well as interspersertion of cancer therapies like chemotherapy and radiotherapy.

**Objective:** Aim of the study was to assess the effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur.

**Method:** A quantitative approach, pre experimental pre-test post-test one group design was used to assess the effectiveness of video assisted educational program regarding prevention of oral mucositis among 50 head and neck cancer patients coming to Radiation Unit, AIIMS, Jodhpur who fulfilled inclusion criteria. Non-probability purposive sampling technique was used to select the patients. Three self-structured tools i.e. socio-demographic variables, knowledge questionnaire and expressed practices rating scale were used to collect the required data set. Reliability and validity of tools were analyzed. Data analysis was performed using SPSS version 20.

**Result:** The study findings reveal that there is significant improvement in knowledge of patients ($t=4.54$, $p<0.05$) which proves that video assisted educational program on oral mucositis prevention was effective in improving the knowledge of head and neck cancer patients. The findings show that there is significant improvement in expressed practices of patients ($t=6.08$, $p<0.05$) which proves that video assisted educational program on oral mucositis prevention was effective in improving the expressed practices of head and neck cancer patients. The result shows a significant association of pre-test expressed practices with occupation of the patient. There is moderately positive correlation (0.54) between knowledge and expressed practices in pre-test and strong positive correlation (0.76) between knowledge and expressed practices in post-test.

**Conclusion:** The present study reveals that video assisted educational program regarding prevention of oral mucositis was effective in improving the knowledge and expressed practices among head and neck cancer patients receiving radiotherapy.

**Keywords:** *Video assisted educational program; Oral mucositis; Knowledge; Expressed practices; Head and neck cancer patients; Radiotherapy.*

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# CHAPTER – I

# INTRODUCTION

# INTRODUCTION

***'The benefits of knowledge can only be realized in practice'***

***Swami Vivekananda***

## BACKGROUND

Cancer is a group of diseases involving cell growth abnormally with the possibilities to spread or invade to the other body parts. Throughout our lives, healthy cells in our body divide in controllable manner and replace themselves in a fashion of control. The disease of cancer starts when cell funtions and metabolism altered and it multiplies out of controlled manner. A tumor or mass is composed of a cluster of such abnormal or uncontrollable growth cells. Most of the cancers are tumors, but not all the tumors having property of cancerous. Benign, or non-cancerous tumors do not invade or spread to other body parts and do not creates new mass or tumors. Malignant, or cancerous tumors replace healthy cells, interfare with the functions of the body and withdraw nutrients from tissues of the body. Cancer is an "iceberg disease". Possible sign and symptoms include a lump, abnormally bleeding, prolonged or lengthening coughing, incomprehensible weight loss, and a alteration in bowel movements. Oncological management includes multiple treatments like chemotherapy, radiotherapy, immunotherapy is dealing with the curative, preventive, and rehabilitative type of aspects of the disease. Palliative care is mainly important in patients with advanced disease.[1]

Accoding to World Health Organization, Worldwide cancer is the second most leading cause of mortality whereas cardiovascular diseases remains the top most cause of mortality in globally. Around estimated 9.6 million deaths occurs in the year 2018. Worldwide around one in six deaths occur due to cancer in 2018. Around 70% of deaths from cancer occue low and middle-income country. Prostate, lung, colorectal, liver and stomach cancer are the most usual types of cancer in men, whereas breast, lung, colorectal, thyroid and cervical cancer are the most common among women.[2]

According to GLOBOCAN (Global Cancer Incidence, Mortality and Prevalence), IARC (International Agency for Research on Cancer) released on 14th December, 2020 the upadated globocan with new estimates on the global cancer burden, indicating that it has risen in cancer cases around 19.3 million and 10 million cancer deaths in 2020.[3]

Cancer is second most persistent death cause in developed countries after cardiovascular diseases and epidemiological evidence clearify that this moves in the low developmental countries. About 22% of cancer deaths is occurred due to the tobacco use. About 10% are due to poor diet, obesity, excessive drinking of alcohol or lack of physical activity.[4]

In India, a low-middle income country is presently transition epidemiologically from predominatinglly communicable diseases to non-communicable diseases. According to National Cancer Registry Programme Report 2020,

13.9 lakh cases of cancer and these cases are likely to increase to 15.7 lakh by 2025 as per Indian Council of Medical Research (ICMR). Population-Based Cancer Registries (PBCRs) that is 28 and Hospital-Based Cancer Registries (HBCRs) that is 58 from across India, between 2012 and 2016.[5]

Head and neck cancer is a cancers group that begins in the mouth, nose, larynx, throat, sinuses, or salivary glands. The most frequent type head and neck cancer is squamous cell carcinoma (squamous cell cancer). About 9 in 10 head and neck cancer start in squamous cell. Symptoms for head and neck cancer include a lump or ulcer or swelling that does not heal this is the most common symptom, a throat sore that does not go away, difficulty in swallowing i.e. dysphagia, bump, lump, tumor or mass in the head and neck area, with or without pain, foul smell mouth odour not decided by hygiene, nasal obstruction or persistent nasal congestion, hoarseness of change in the voice, frequent nose bleeds and unusual nasal discharge, weakness or numbness of a part in the body in head and neck region, difficulty and pain in moving the tongue or jaw, or unexplained weight loss. There may also be difficulty in breathing or respiration. About 75% is cause of head and neck cancer is tobacco chewing or use of alcohol. Other risk factors includes use of betel quid, preserved or salted foods, poor oral hygiene, radiation exposure, certain types of human papillomavirus, certain workplace/occupational exposures like wood dust is causes nasopharyngeal cancer, and Epstein-Barr virus also causes nasopharyngeal cancer and salivary glands cancer. About 90% of head and neck cancers are squamous cell cancers. The diagnosis of cancer is confirmed by tissue biopsy of the particular area of affected part. The

degree of spread of cancer or staging may be discovered by various blood tests and medical imaging.[6]

In 2020, Worldwide, head and neck cancer patients are having more than 6,50,000 cases and 3,30,000 deaths annually. In the united states, head and neck cancer cases are 3% of total cancer cases, with approximately 53,000 Americans developing head and neck cancer per year and 10,800 dying from this disease. In Europe, approximately 2,50,000 cases that is estimated 4% of the total cancer incidence and 63,500 deaths in 2012. In 2015, worldwide head and neck cancers patients are having more than 5.5 million people (2.4 million in mouth, 1.7 million in throat, and 1.4 million in larynx cancer), and 3,79,000 deaths (146,000 in mouth, 127,400 in throats, 105,900 in larynx cancer).[7]

In India, by the year of 2020, the head and neck cancer cases are estimated to be around 2,18,421 (19% of all cancers). Males are affected significantly more than females. The most common age of diagnosis of head and neck cancer is between 55 and 65 years old. The average 5-year survival rate of head and neck cancer was 74.5% for lips, 42.7% stand for the anterior tongue, 25.5% stand for the posterior tongue, 45.1% stand for the mouth, 29.7% stand for the oropharynx, 38.7% stand for the nasopharynx, 29.1% stand for the hypopharynx, and 41.2% stand for the larynx in india.[8]

Radiation therapy or radiotherapy is a treatment using high doses of ionizating radiation, generally as a part of treatment of cancer to kill or control cancer cells and shrink tumour and normally delivered by a medical linear accelerator (LINAC) that is used for external beam radiation that is teletherapy treatments. It distributes high energy electrons or x-rays to the region of patient's tumour. Radiation therapy may be curative according to various types of cancer like if it was localized to one area of the body. This may also be used for the adjuvant therapy with chemotherapy or surgery, to prevent tumour recurrence after surgery, or to remove or detachment of a primary malignant tumour in early stages (like, early stages of breast cancer). Radiation therapy is adjuvant with chemotherapy or surgery, and has been used before, during, and after surgery or chemotherapy in various types of cancers. Radiation therapy is commonly applied to the cancerous tumour because of its capability to control cell growth by destroying the cancerous DNA and minimize pain (mainly used in palliative care). Ionizing radiation works by destroying the DNA of cancerous cell leading to cellular death and cure and stop the spread of the cancer. Radiation beams are used as shaped from certain angles of exposure to cut across at the tumour and providing a much larger absorbed dose to protect the normal body tissues such as organs and skin in which radiation pass through for treating the cancer or tumor.[9]

Oral mucositis refers to erythematosus and ulcers in the oral mucosa observed in patients with head and neck cancer receiving radiotherapy. It is acute complication or side effect of radiotherapy. This condition influence almost all patients of head and neck cancer receiving Radiotherapy (RT).

Severe oral mucositis may outcome in the parenteral or enteral nutrition need due to dysphagia that is difficulty in swallowing and systemic analgesics and topical analgesics like lidocaine due to pain, expand risk for infections in the body due to the disorganised oral mucosa barrier, prolonged and unscheduled hospital stays as well as interspersertion of cancer therapies like chemotherapy and radiotherapy.[1]

The pathophysiology of oral mucositis has passage from what was to be understood from a simple process to the series of overlapping and interrelated events activated by cancer therapy.[7] The current understanding of oral mucositis pathophysiology starts with initiation of oral mucosal damage by radiotherapy due to harmful ionixed high doses of, which leads to reactive oxygen species generation damages the primary level, which causes host inflammation response damages the amplification, which creates mucosal soreness which is a result of epithelial death of cell that is cell suicide and necrosis, and followed by healing of the area. Oral mucositis is common side effect or complication of the radiotherapy of head and neck cancer. Oral mucositis prevention is necessary to reduce other complications like infections, oral thrush, oral candidiasis. It is mainly prevented by mouth washing with various aspects like soda-bi-carbonate, chlorhexidine. And use of ice chips to prevent chemotherapy or radiotherapy associated oral mucositis to reduce the pain and also called as cryotherapy. And also prevented by eating nutritious food like soft meal with high protein diet and avoiding triggering factors like chilly, oily foods.[10]

## NEED OF THE STUDY

Oral mucositis is side-effect or complication occurs among patients receiving radiotherapy. Oral mucositis incidence was higher in patients having primary tumor in oral mucosa or cavity, nasopharynx or oropharynx among head and neck cancer patients, together with the patients who received more than 5000 cGy of total dose of radiation, and the patients who having treatment with altered fractionation of radiation scedules in radiotherapy. Oral mucositis from radiotherapy affects patient's and their family's quality of life. In the present days, oral mucositis is mostly managed with palliative care to decrease the pain and discomfort and iccrease the quality of life and supportive care to the patients. According to the guidelines of 2009, using palifermin, is the first active drug of mucositis and others like amifostine for the protection from the radiation and cryotherapy in which ice chips was used to decrease the pain of oral mucositis. The current scenario of management is focus on palliative care measures, for example pain management, maintenance of good oral hygiene by use of mouthwash like listerine and soda-bi-carbonate solution and dietary management like high-protein diet and avoiding triggering factor such as chilly and fatty foods.[11]

Approximately daily dose of radiation that is 200 cGy, five days in a week for 5-7 continuous weeks received by the head and neck cancer patients with radiotherapy. Almost all head and neck cancer patients with radiation therapy will receive various degree of oral mucositis. Some research studies revealed that severe form of oral mucositis occurred in 29-66% of head and neck cancer patients who are receiving radiotherapy.[12]

Mucositis is the painful, inflammatory and ulcerative condition of the mucus membrane which is the lining of the digeative tract from the side effect of chemotherapy and radiation therapy treatment of cancer. Mucositis is an unavoidable complication or side-effect of radiation therapy. Its seriousness is depending on the ionizing radiotherapy type, the volume of irradiated tissue, per day dose of radiotherapy, and the cumulative doses. According to the recent clinical trials, the severeness of acute responses of normal tissue, mainly oral mucositis, is significantly expand when the time of overall treatment is shortned. The condition of oral mucositis may sometimes become complicated from the local infection, mainly in immunocomprised patients like as in cancer patients and HIV (Human Immunosuppresive Virus) patients. Some viral infections like HSV (Herpes Simplex Virus), and some fungal infections for example candidiasis can sometimes to spread over and above on oral mucositis.[13]

Oral mucositis is one of the most usual side-effect or complication of the radiation therapy. Oral mucositis can be treated or prevented by proper measures of oral hygiene such as use of proper mouthwashes using soda-bi-carbonate solution and listerine mouthwash and oral care. It was revealed that proper oral care also resolved the oral mucositis condition among patients receiving radiation therapy. In point of fact, multiple studies have showed that good oral care maintenance and hygiene and using ice chips that is cryotherapy can resolve the severity and occurance of oral mucositis condition. It is essential to study the knowledge and practices regarding prevention of oral mucositis for addressing this problem in the health care

systems. Not many studies have been done on effectiveness of video assisted educational program regarding prevention of oral mucositis among patients receiving radiation therapy. For effective implementation regarding treatment and prevention of oral mucositis among head and neck cancer patients toward video video assisted educational program is essential.[14]

Hence, this study was undertaken to assess the effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at Radiation Unit, AIIMS, Jodhpur.

## AIM OF THE STUDY

The aim of this study to assess the effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy.

## PROBLEM STATEMENT

“Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur.”

## OBJECTIVES

1. To assess and compare the knowledge regarding prevention of oral mucositis among patients receiving radiotherapy before and after video assisted educational program.

2. To assess and compare the expressed practices regarding prevention of oral mucositis among patients receiving radiotherapy before and after video assisted education program.

3. To determine association of knowledge regarding prevention of oral mucositis with selected demographic variables.

4. To determine association of expressed practices regarding prevention of oral mucositis with selected demographic variables.

5. To find out correlation between knowledge and expressed practices regarding prevention of oral mucositis among patients receiving radiotherapy in pre-test and post-test.

## HYPOTHESIS

Hypothesis were tested at 0.05 level of significance.

**$H_{01}$:** There will be no significant difference in pre-test and post-test knowledge score regarding oral mucositis prevention among patients receiving radiotherapy.

**$H_1$:** There will be significant difference in pre-test and post-test knowledge score regarding oral mucositis prevention among patients receiving radiotherapy.

**$H_{02}$:** There will be no significant difference in pre-test and post-test expressed practices score regarding oral mucositis prevention among patients receiving radiotherapy.

**$H_2$:** There will be significant difference in pre-test and post-test expressed practices score regarding oral mucositis prevention among patients receiving radiotherapy.

**$H_{03}$:** There will be no significant association of level of knowledge with selected socio-demographic variables regarding prevention of oral mucositis among patients receiving radiotherapy.

**$H_3$:** There will be significant association of level of knowledge with selected socio-demographic variables regarding prevention of oral mucositis among patients receiving radiotherapy.

**$H_{04}$:** There will be no significant association of level of expressed practices with selected socio-demographic variables regarding prevention of oral mucositis among patients receiving radiotherapy.

**$H_4$:** There will be significant association of level of expressed practices with selected socio-demographic variables regarding prevention of oral mucositis among patients receiving radiotherapy.

**$H_{05}$:** There will be no positive correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test.

**$H_5$:** There will be positive correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test.

**$H_{06}$:** There will be no positive correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in post-test.

**$H_6$:** There will be positive correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in post-test.

## OPERATIONAL DEFINITION

1. **Effectiveness:** In this study effectiveness is refers to a change which is a result of video assisted educational program regarding oral mucositis prevention in terms of knowledge and expressed practices among patients receiving radiotherapy.

2. **Video assisted educational program:** In this study video assisted educational program is refers to providing education regarding oral mucositis prevention to the patients through animated video prepared for increase in knowledge and practices which consist introduction of oral mucositis, clinical manifestations, dietary management and preventive measures.

3. **Knowledge:** In this study knowledge refers to the level of understanding of patients regarding oral mucositis prevention in terms of definition of oral mucositis, clinical manifestations, diet, treatment, oral hygiene and prevention of oral mucositis.

4. **Expressed practice:** In this study expressed practice refers to the verbal responses of patients to practice items related to oral mucositis prevention among patients receiving radiotherapy in terms of brushing, medicated mouthwash, diet and checkups of oral mucositis.

5. **Oral mucositis:** In this study oral mucositis refers to the inflammation in and around the mouth which occurred due to the side-effect of Radiation Therapy.

6. **Radiotherapy:** In this study radiotherapy refers to the treatment of cancer that uses heavy doses of radiation to kill cells of cancer and shrink tumor.

## DELIMITATION

1. This study is delimited to head and neck patients only.

2. This study delimited to patients receiving radiotherapy only.

## CONCEPTUAL FRAMEWORK

A conceptual framework is a group of concepts, with a set of propositions that having the relationships among them. Conceptual framework plays various interrelated roles in the progress of nursing sciences. The main purpose is to answer the research question which can be generalizable.

Conceptual framework promotes communications and provides for multifacet/systematic approach to education, research, practice and administration in nursing. For this study, the conceptual frame work was based on General System Theory by Bertanlanffy (1968).

General system theory says that “Science of wholeness and its purpose is to integrates scientific thinking across the disciplines and provide frame work for analyzing the whole of any given system”.

Lubwig Von Bertanlanffy defines System “as a complex interaction” that shows system consists of 2 or more converted elements which form an organized whole and interact with each other rather than loss of single function. In this all system activity can be resolved in to an aggregation of feedback, circuits like: input, throughout and output. The system acts as a whole dysfunction of a part

causes a system disturbance. The feedback circuit helps in the maintenining the intactness of the system.

**Input:**

Input refers to any form of material or human, information or energy, that enters into a system by its boundary. In the current study input is the assessment of the knowledge and expressed practices regarding oral mucositis prevention in head and neck cancer patients receiving radiotherapy.

**Throughput:**

Throughput is the process that fall in the area between the input and output process, that helps the input to be transferred as output in such a way that it can be easily used by the system. In the current study, throughput refers to administering the video assisted educational program regarding oral mucositis prevention in head and neck cancer patients receiving radiotherapy.

**Output:**

Output is said to be material, energy, or information that is already transferred to the environment. Change is the process that is measurable and observable through output which should be different from that which is entered into the system that is input. In the present study output refers to as the evaluation or result of target group for change in knowledge and expressed practices

regarding oral mucositis prevention in head and neck cancer patients receiving radiotherapy.

In the present study the self-structured questionnaire adopted to determine the knowledge and self-structured rating scale adopted to determine the expressed practices regarding oral mucositis prevention. Thus, the information gathered can be used as feedback to the system, which helps in the maintaining and improving the system.

**Feedback:**

Feedback is the process of gathering information that is received at each stage of the system and when input act as a feedback it helps in direction/guidance in its evaluation. In the current study feedback is not taken or included.

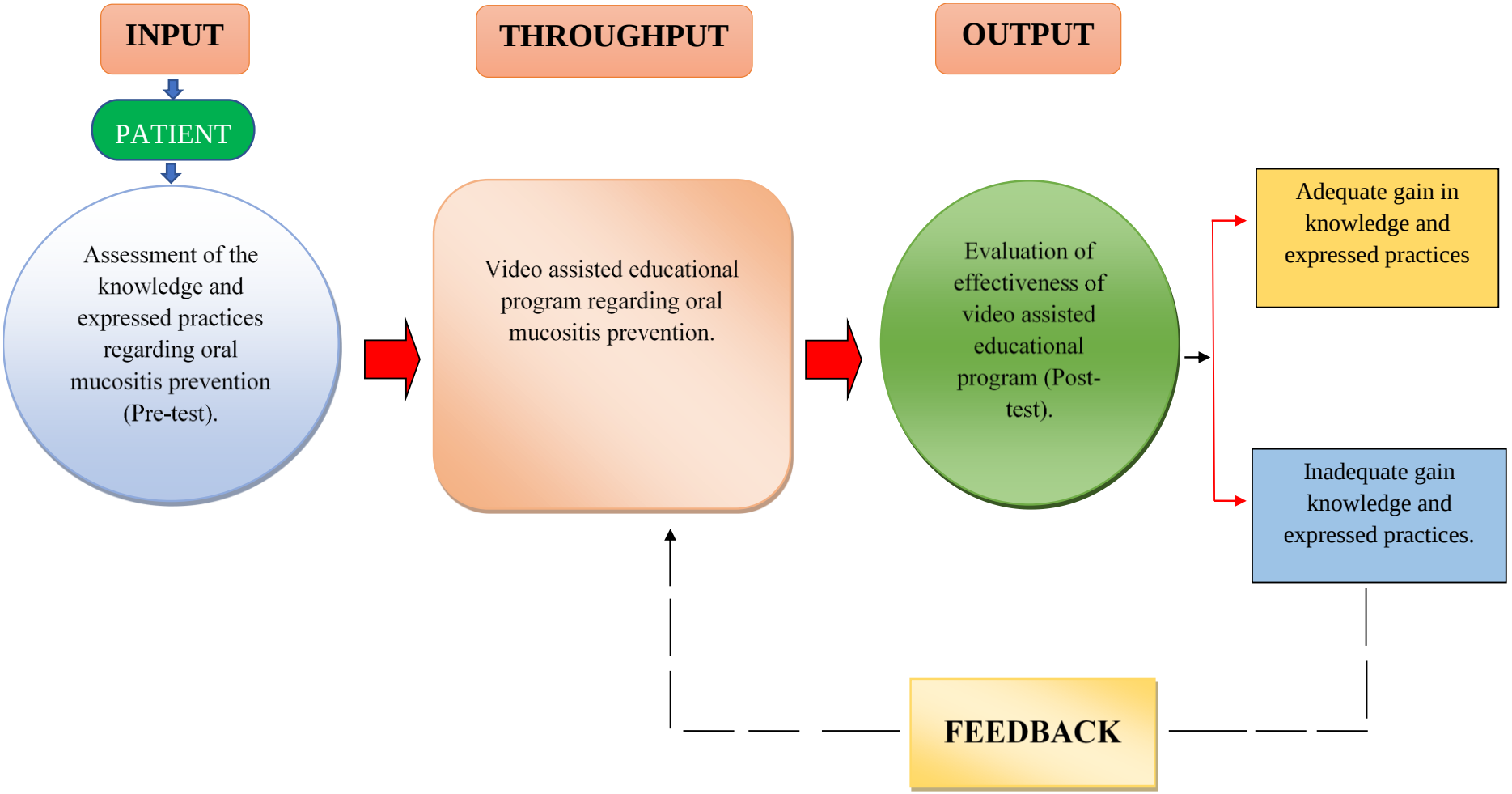


**Fig. 1: CONCEPTUAL FRAMEWORK BASED ON GENERAL MODEL BY BERTANLANFFY (1968)**

# PLAN FOR WRITING THE RESEARCH REPORT

The chapter present the background of the study, need of the study, statement of the problem, objectives of the study, operational definitions, hypothesis, delimitation and conceptual framework of the study.

Further report of the study follows in four chapters:

**CHAPTER – II** presents Review of Literature.

**CHAPTER – III** is devoted to the methodology of the study which compromises research approach, research design, research variables, setting, population, sample, development and description of the tool, validity and reliability of the tools, procedure of the data collection and plan for the data analysis.

**CHAPTER – IV** presents the analysis and interpretation of the data.

**CHAPTER - V** provides the discussion of the study.

**CHAPTER – VI** is devoted to the summary, conclusion and recommendation of the study which compromises summary, strength of the study, limitation of the study, implications, recommendations and conclusion.

**REFERENCES**

**ANNEXURES**

# CHAPTER – II

# REVIEW OF LITERATURE

# REVIEW OF LITERATURE

***'A researcher cannot perform significant research without first understanding the literature in the field'***

***Boote & Beile***

Review of literature is an essential step in the development of research project. The purpose of review of literature is summarization of new substantive or theoretical ideas, formation or testing a theory, organization of knowledge from different fields and integration of knowledge into a new whole. The review of literature further helps to refine certain parts of the study, specifically the problem statement, conceptual framework, design and data analysis process. It also provides the data for comparison and justifies the need for replication.

The review of literature justifies the need for replication, gives a basis for future investigations, clarify the feasibility of the study, explain the constraints of collection of data and helps to link the findings of one study to another study. It also helps to demonstate a comprehensive body of scientific knowledge in a discipline of a professiona from which valid and relavant theories may be developed.

Related literature are both non-research and research, was explored to broaden the understanding and insight gain into the selected problem under the study. The review of literature for the present study has been done from

published articles, textbooks, reports, Medline search on oral mucositis prevention.

Review of literature was done to assess in-depth information regarding prevention of oral mucositis in terms of knowledge and expressed practices among head and neck cancer patients and in further, exploring the research question, design the research methodology.

The review of literature has been categorized into 3 sections –

I. Knowledge among patients regarding oral mucositis.

II. Practices among patients regarding oral mucositis.

III. Intervention to increase the knowledge and improve practices regarding oral mucositis.

***<u>Knowledge among patients regarding oral mucositis</u>***

**Loai Abu Sharour et al.** carried out a cross-sectional study to assess knowledge and compliance with oral mucositis management guidelines among oncology nurses. A non-participant observation approach was used in this study. This study was conducted in two phases. In first phase, knowledge among 140 oncology nurses were assessed by using convenience sampling. And in second phase, practice among 20 oncology nurses were assessed by observation using random sampling technique from the participants in phase

first. Result revealed that 40.7% oncology nurses had an unsatisfactory level of knowledge. Most of the participant had deficit knowledge related to oral mucositis definition, scoring, assessment, pathology, prevention, treatment, and patient education and advice. There is a significant difference observed in qualification of nurses such as oncology nurses with diploma, graduate, and post-graduate degrees which is determined by one-way analysis of variance (ANOVA) at p is 0.001. There was no significant difference observed between average score of males, and in female nurses average score was higher than those of nurses at p is 0.45. There is no significant difference is identified among nurses with different job titles regarding knowledge at p is 0.51. The average score of skill performace in male (29.20 ± 2.10) was higher than the skill performance of females (27.10 ± 1.80). So, this study concluded that oral mucositis management guidelines in terms of knowledge and compliance among Jordanian nurses of oncology need to be improves. National oral mucosiis prevention and management guidelines were used in Jordan and there is also recommendation for continuiung education and training for improving knowledge and practices.[15]

**J Gibney et al.** carried a study to assess knowledge, attitude and current practices among nurses regarding oral hygiene using a questionnaire. Setting of the study was the aged care wards of two acute tertiary referral hospitals at New South Wales, Aurtralia. Study result revealed that about 74% nurses had a set of oral hygiene practice, and 54% nurses learn oral hygiene practice from universities. Registered nurses (72%) was the main qualification in the present study. Main oral hygiene practices include toothbrushing, denture

cleaning, and swabbing the oral cavity with a toothette etc. About 99% nurses accept that oral hygiene is important phenomena. Patient behaviors, patient physical difficulties and lack of staff and time were the main barriers in using oral hygiene practices. The study concluded that oral hygiene was important in nurses. The study also recommended that education institutions and hospital should consider the joint development of a formal oral hygiene training package and procedure that can be used on acute geriatric care wards.[16]

**Hilary Southern et al.** conducted a study to assess knowledge and education regarding oral care and oral health assessment for patients undergoing treatment of cancer among nurses. Non-random sampling technique was used among 100 nurses working in general wards and nurses working in cancer wards using oral care questionnaire in which response rate is 72%. Data was collected in terms of knowledge and education regarding oral care, management and prevention of oral care and impact on knowledge of nurses for oral care and performances. Reliability of the questioannire was determined by Cronbach alpha formula which is 0.93. Study result revealed that nurses had not considerable oral care education during pre-registration education, and their oral health status knowledge, clinical menifestations of abnormalities was inadequate. Nurses stand for a high degree of priority for oral care among patients with cancer. So, this study concluded that nurses need more education, if they are to management of oral care among cancer patients.[17]

**S Ergun et al.** conducted a study to recognize, compare and analyze the knowledge among dentists regarding lesions in oral mucosal and assess the distinction between the attitudes by practice setting among dentists. Total 300 participants were included in the study. 3 groups were made. General dental practitioners who were emplying in private dental offices were included in first group, polyclinic dentists were enrolled in second group and dentist working at universities in Istanbul, employed in department except the department of medicine and oral surgery were included in third group. Tool of the study include a 17 items self-structured questionnaire involving demographic data, oral mucosal lesions knowledge and opinion and dental practice characterstics. Study result revealed that 85% dentists told difficulties in diagnosing oral mucosal lesions. About 62% of the dentist were failed to renovate their knowledge from the help of literature, about 93% did not consult other practitioner and take on biopsies. Oral mucositis lesions patients were treated by dentists practicing at universities at p is 0.0001. This study was cocluded that most of the dentist's encounter difficulty in diagnosing some oral mucositis lesions.[18]

**Vinay Suresan et al.** carried a study to assess knowledge, attitude and practices regarding denture hygiene with regard to education of patient in denture care among dental practitioners at Jabalpur city, Madhya Pradesh, India. About 168 participants were included in the study. The study result revealed that most of the participants that is 85% were qualified upto bachelor degree. About 18% participants did not relate complete denture with conditions like denture stoamatitis and other serious systemic diseases.

Around half of the participants that is 48% were dental practitioner and 31% were specialists accepted that describing denture hygiene information to old patients could be time-consuming. So, this study concluded that participant had limited knowledge regarding the cleaning of denture materials and hygiene related to denture and importance of dental hygiene.[19]

***Practices among patients regarding oral mucositis***

**Acharya Radha et al.** conducted the descriptive cross-sectional research study to evaluate knowledge and practices regarding oral care among patients receiving chemotherapy. Setting of the study was B.P. Koirala Memorial Cancer Hospital, Bharatpur. Total sample size was 102 participants included in the study who met inclusion and exclusion criteria and method of data collection is face-to-face interview technique was used. Data analysis was done by descriptive and inferential statistics using SPSS version 16.0. Study duration was around 1 month that is from June 2010. The study result revealed that 23.4% of the participants had adequate oral care and 18.6% of the participants had adequate practice among patients receiving chemotherapy. Some of the participants that is 28.4% had adequate knowledge. Among 60.7% participants had adequate knowledge on oral problems prevention and 55.8% on treatment of oral problems. Information on oral care mainly received from the nurses. So, this study was concluded that most of the participants had inadequate knowledge and practice on oral cavity care. There was found association of selected demographic variables that is age and education. And there was no association found of knowledge with

family history of cancer. So, the study concluded that proper knowledge regarding care of oral cavity should be given to the patients before undergoing chemotherapy.[1]

**Aline May Barbosa et al.** carried out a study to assess knowledge and practices of oral health among children who are admitted in hospital due to cancer. The samples were collected through the caretakers, children and nurse team. Tool was a questionnaire consisting the general knowledge about oral hygiene, methods of oral hygiene and instruments which are used for oral hygiene. Result revealed that the oral hygiene responsibility of children was taken by the caretakers in 90.7% who received directions from the team of nurses in 21.4% of cases. About 62.8% cases, the team of nurses revealed that all patients manifestated sign and symptoms for the oral cavity discomfort whereas the caretakers showed a different case. All study subjects revealed that it was essential to having a dentist for the oral hygiene management in the oncology departments. According to the obtained result of the study, that was concluded that there was no protocol for oral health for children who are admitted in the hospital with cancer and that the most commonly happen oral manifestations among patients receiving chemotherapy were mucositis, nausea and vomiting, xerostomia that is dryness of mouth and loss of sensation of taste.[20]

**Ee-Yuee Chan et al.** carried out a descriptive cross-sectional design study to evaluate knowledge, attitude and practices of oral care for critically ill patients

among local nurses. Based on the literature, fouced group discussion and questionnaire they were developed 31 questions. There were 3 domains in the tool that was knowledge, expressed practices and attitudes and beliefs. They selected the participants in 5 ciritical care units and high dependency during the period of 2 weeks. The descriptive analysis was used to summarize the data. And found the association of ward speciality, nurses' qualification, shift of work and job function with the nurse's knowledge regarding oral practices. Exploratory factor analysis was used to find out factorial validity of attitude and belief domains of the tool. Study result revealed that 97% of the nurses gave back the surveys. Half of the participants that is 80% be of the opinion that good oral hygiene had significant affect the clinical outcomes of patients. So, practices differ from the requisites, method which are used in oral care measures and frequencies. More than half of the samples that is 66.3% thinked that they had adequate level of oral care training. The present study concluded that the provided survey was useful for the insights regarding the knowledge and practices about oral hygiene among nurses who were caring the critically ill patients. The findings of the study also revealed that local nurses had lack in adequate knowledge regarding oral health and they were delivered proper oral hygiene among critically ill patients improperly. The majority of the nurses learned regarding the oral care in term of knowledge during their basic education in nursing. The level of knowledge is inadequate in preparing them challenging fro caring the critically ill patients for the oral hygiene measures. The result of the study recommended that there was need for continuing training in this area.[21]

***Intervention to increase the knowledge and improve practices regarding oral mucositis***

**Yüce UO et al.** conducted the randomised control study to evaluate the effectiveness of education about prevention of oral mucositis on the quality of life among cancer patients who were receiving chemotherapy. Sample size was 60 participants was used in which 30 participants were including in experimental group and 30 participants were including in control group. Tool of the study was oral assessment guide was applied in both groups. Education was provided in the experimental group regarding oral mucositis prevention and elaborated about the patient education booklet. According to the oral assessment guide, oral mucosa of both groups was evaluated on the $5^{th}$, $10^{th}$, $15^{th}$ and $21^{th}$ day after the chemotherapy. Tool of the study that is oral assessment guide was again put on the day 15 and on the day 21 of the treatment. The occurance of oral mucositis in the experimental group was less than the control group at $p<0.05$. Quality of life wise general health status and the field of functional was higher in the experimental group as compare to control group. The mean of the score of the symptoms of oral mucositis also lower than the control group at $p<0.05$. The study concluded that the education was to be provided to educate the patients had an essential role in stave off the oral mucositis which is begins from the effect of chemotherapy which is the treatment modality of cancer.[22]

**Düzkaya DS et al.** carried out the study to evaluate the effectiveness of oral care standards guides which was specially developed for children who were

admitted in the intensive care units (ICU) regarding prevention of oral muositis. The prospective, single group interventional design was used at the intensive care unit of paediatrics in the university hospital at Istanbul. Study duration was from January to December. According to the guide of oral care which was formed by the researcher, intervention that was daily oral care was given to the children who were admitted in the intensive care units. Data collected from the patients by applying the form of data collection and assessment of scale of oral mucositis which was published by the World Health Oraganization. Result of the study clearly revealed that only 5.2% patients present in pre-test group and 2.5% patients were parsent in post-test of the interventional group. It showed that grade 1 of oral mucositis present in 10 participants, grade 2 of oral mucositis present in 6 participants in pre-test of the interventional group. And about post-test, grade 1 of oral mucositis present in 3 participants and grade 2 of oral mucositis present in 4 participants. There was increased frequency of oral mucositis in pre-test interventional group as compared to post-test interventional group and the differences between pre-test and post-test were not significantly significant at p is 0.067. The study concluded that applying oral care according to the oral health care guidelines the oral mucositis can be decreased.[23]

**Sanjeev Khanagar et al.** carried out a study to evaluate the effectiveness of education regarding improving oral hygiene measures among their caregivers at institutionalized elderly in Bangalore city. Design of the study was cluster randomized experimental trial with the elderly home as unit of randomization by which home of elderly home of 7 out of 65 was selected. Pre-test was

assessed regarding oral health knowledge among caregivers, after that education regarding oral health were given to the particiapants in the group. Status of oral hygiene of participants was assesse by plaque in dental, debris levels, stomatitis with dentures. In the control group education related to oral health was provided at the end of month $6^{th}$. There was found significant difference in knowledge regarding oral health among caregivers in pre-test and post-test at $p<0.001$. The significant reduction in mean score of plaque from 3.17 ± 0.40 to 1.57 ± 0.35 in post-test, score of debris from 2.87 ± 0.22 to 1.49 ± 0.34 and score of stomatitis in dentures from 1.43 ± 0.68 to 0.29 ± 0.53 and score of plaque in denture was from 3.15 ± 0.47 to 1.21 ± 0.27. So, the study concluded that there was found significant increased found in knowledge regarding oral health in caregivers and status of oral hygiene in the elderly.[24]

**Rekha Raghavan et al.** carried out a study to evaluate the effectiveness of Mentha piperita leaf extract regarding oral pathogen. The method of cold water was used to prepared leaf extract of Mentha piperita. Microbiological materials were used as three microbial strains that is aggregatibacter actinomycetem comitans, candida albicans and streptococcus mutans. Positive control is used as chlorhexidine 0.2% to know about the antimicrobial activity at 24 hours and next at 48 hours, digital caliper was used to estimate the zone of inhibition. Analysis of variance one way was used to compare the activity which occurred within and between the different starins of microbes. SPSS version 21.0 was used to analyzed the data. The $p<0.05$ was set as significant statistically. Study result revealed that most of the inhibition zone was seen in both Mentha poperita extracts and the chlorhexidine 0.2% seen with Streptococcus Mutans

after 24 hours and 48 hours, followed by aggregatibacter actinomycetem, and also in candida albicans. So, the study was concluded that Mentha piperita revealed antimicrobial activity against the microorganisms of oral cavity which were created less or more, major severe diseases in oral cavity. And it also can be used as an alternative treatment or medicine for the conventional treatment.[25]

**Rai Singh et al.** carried out a study which aimed to discover the effectiveness of honey for topical application regarding oral mucositis induced by chemotherapy. Research design observational blind study was used among 100 participants receiving the chemotherapy who had oral mucositis. All research participant was divided into experimental and control group who had received different regimen. They daily received the practice of antiseptic and analgesics gel impimentation whereas in experimental group, participant also received the topical implementation of honey on oral mucosa for the oral mucositis management. All paticipants were observed from the day when they developed oral mucositis to the day when clinical menifestations were settling. Stomatitis toxicity criteria which was developed by the world health organization that was a scale which was developed to assess the severity of the oral mucositis was used by an obersever blind. The study results also showed that there was statistically significant difference found in decreasing the oral mucositis severity in both groups of participants at $p<0.01$. There was also statistically significant found difference observed in decreasing duaration of management of oral mucosits in the experimental group that was median 4 d and IQR was 4-6 d as compared to control group where median was 6 d and

IQR was 6-8 d at p<0.01. The study concluded that topically application of honey on the mucosa of oral cavity was effective in decresing the management duration and severity of oral mucositis which was developed from the chemotherapy. That also revelaed that honey was having good product of quality with rich nutritious ingredients and would be pleasant, cost-effective and simple modality for the chemotherapy induced oral mucositis management.[26]

**Lucy Pattanayak et al.** carried out a study to evaluate the effectiveness of oral glutamine efficacy and safety which were supplementation to these participants. They randomly assigned to 2 arms 162 participants among squamous cell carcinoma of the head and neck cancer patients from December 2013 to December 2014. Oral glutamine once per day was given in participants in arm A whereas arm B was considered as negative control subjects. All participants receiving radiotherapy in 35 fractions at 70 Gy over the 7 weeks with chemotherapy in the form of cisplatin once a week in injection form. To evaluated for the severity and onset of oral mucositis, level of pain, analgesics use and ryles tube feeding were assessed by the particiapants once in a week. The study result revealed that 53.1% participants had developed the oral mucositis on the 5$^{th}$ week in the glutamine arm as compared to control arm 55.5% participants has developed the oral mucositis on the 3$^{rd}$ week. 92.35% of participants were developed grade-3 oral mucositis in the control group wheras none in the glutamine arm that was experimental group. Hence, the study concluded that use of oral supplementation of glutamine for the affordable and feasible treatment

alternative for management of oral mucositis among head and neck cancer patient receiving chemotherapy and radiotherapy.[27]

**Carin M J Potting et al.** carried out a study to evaluate the effectiveness of education regarding oral care which given to nurses incharge in terms of knowledge and skills among patients who were at risk of oral mucositis. Sample of the study was the nurses who work in haematology wards of two different hospital in the interventional study by a baseline assessment of the skills and knowledge. Intervention in the form of education regarding oral care was given in the one hospital and follow ups assessment was performed in both hospitals. Examination of the nurses record and reports and nurses performace was observed in performing oral care were serve as baseline as well as in the follow-ups. The study result revealed that there was significant difference found in the level of knowledge and skills before and after the implementing intervention in the form of education, whereas there was no difference was found in level of knowledge and skills at two different point of time at the comparison hospital, where no intervention that was education was given. The records revealed that no difference was found at baseline or follow-up in the two groups. The result of the observation clearly revelaed that implementation of the education sessions regarding protocol of oral care among the nurses were better as compared to those who did not attended the education session. So, the study concluded that education had a positive influence regarding oral care in terms of knowledge and skills among nurses who cared the patients who were at risk of developing oral mucositis, but the documentation of quality of oral care was not affected.[28]

**Moonkyoo Kong et al.** conducted a study evaluate the clove-based herbal mouthwash efficacy and safety regarding ameliorating radiotherapy induced oral mucositis among head and neck cancer patients. Quasi experimental design was used in which 14 participants were approached. The participant of the interventional group swished their mouth by using a clove-based herbal mouthwash during radiotherapy wheras the participants in control group swished their mouth with clean water. Incidence of radiotherapy induced oral mucositis was the primary end point of the present study. Time of onset of radiotherapy induced oral mucositis, feeding tube incidence used for supplemental nutrition, loss of body weight, radiotherapy induced oral mucositis, maximum pain score, radiotherapy incidence of interruptions, and radiotherapy interruption duration were the secondary end points. The study result showed that the duration of grade>2 oral mucositis was shortnened by clove-based herbal mouthwash use i.e. 24.3 days in experimental group and 37.1 days in control group at p was 0.044. The result also revealed that loss body weight was reduced during radiotherapy i.e. 3.1% in experimental group and 7.4% in control group at p was 0.023 as compared to clean water. So, the present study concluded that the clove-based herbal mouthwash had a possibly beneficial effect for preventing and reducing oral mucositis which developed due to radiotherapy among head and neck cancer patients.[29]

# CHAPTER – III

# RESEARCH METHODOLOGY

# RESEARCH METHODOLOGY

***'Good designers design what they would design before they start designing it'***

***M. Conbanli***

Research methodology is a way to systemically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps or parts that are generally adopted by a research in studying this researcher to design this methodology for his problem as they same may differ from problem to problem. It includes the step procedure and strategies for gathering and analysing the data in research investigation.

Research methodology is a systematic way to solve the research problem. It comprises the steps, strategies and procedure for gathering and analysing the data for research investigation. This chapter deals with research methodology which adopted for "Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur." Its gives detailed description about research design, research setting, population, sample, sampling technique, sampling criteria, data collection tools, tool validity, ethical consideration, pilot study, tool reliability, procedure for data collection, data analysis and interpretation.

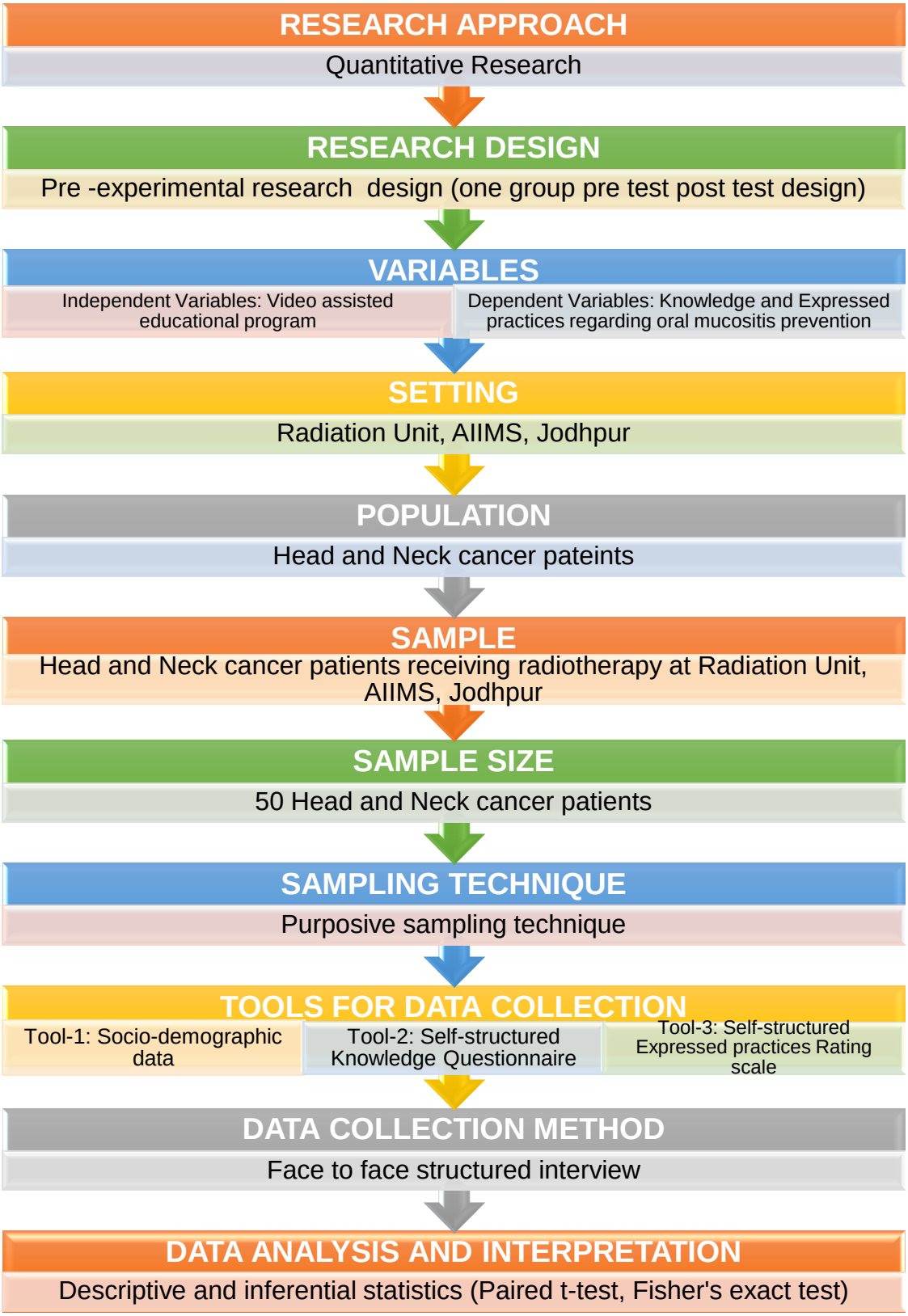


**Figure 2: Diagrammatic representation of research methodology**

## RESEARCH APPROACH

Research approach is the vehicle for hypothesis testing or answering question. It indicates the basic procedure of conducting research. It involves a plan as well as a structure and strategy.

In the give study the research approach used was quatitative research. Quatitative research is the systematic, investigation, empirical of observable phenomena via mathematical, statistical or computational techniques.

## RESEARCH DESIGN

The research design can be defined as a blueprint to conduct study that increases the control over factors that could hinder with the findings of the validity.

In the given study the research design used was pre-experimental research design. It was sub-divided into one group pre-test post-test design. One group pre-test post-test design involves a single case is observed at two time points, one before the intervention and one after the treatment. In this no control group is employed. It was used to assessment for the effectiveness of video-assisted educational programme regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy.

| Pre-test | Intervention | Post-test |
|---|---|---|
| O1 | X | O2 |

**Figure 3: Diagrammatic representation of research design**

O1 - Assess the pre-test knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

X - Video assisted educational programme regarding oral mucositis prevention was given to patients receiving radiotherapy.

O2 – Assess the post-test knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

**VIDEO-ASSISTED EDUCATIONAL PROGRAMME**

In video-assisted educational programme researcher was asked to use a self-prepared video regarding prevention of oral mucositis among patients receiving radiotherapy. In this video, the content of video was introduction of oral mucositis, clinical manifestations, treatment and preventive measures. The time duration of the video was 4 minutes 15 seconds. Validity of video established by taking expert's opinion. The video was circulated to experts of field in medical surgical nursing. After getting their valuable suggestion the necessary modifications were made in the video under the guidance of guide.

## RESEARCH VARIABLE

In present study, there are three variables-

1. Independent variable: Effectiveness of video assisted educational program.

2. Dependent variable: Knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

3. Socio-demographic variable: Age of the patient, gender of the patient, educational status of the patient, occupational status of the patient, family income per month and residential area.

## STUDY SETTING

The setting is defined as the physical conditions and location in which data collection takes place in the study. The study was carried out at Radiation Unit, AIIMS, Jodhpur. AIIMS, Jodhpur is 960 bedded hospital and it is located at second phase of Basni, Jodhpur.

As per data of IT cell of AIIMS, Jodhpur, annually 3449 patients attended the Department of Radiation and in the month of October 2020, there was 662 patients attended. It was functioning from Monday to Saturday from 8 AM to 4PM with an average of 35 patients attending the Department of Radiotherapy everyday. Patients suffering from head and neck cancer come here for radiation therapy.

## POPULATION

Population is defined as the entire aggregation of cases that meets a designated set of criteria. The need for defining a population for a research project arises out of requirements to specify the group by which the results of study can be applied. In this study the population was head and neck cancer patients who were receiving radiotherapy.

## SAMPLE

Sampling defined as the process of selecting the portion of population which represent the entire population. In the present study samples were patients receiving radiotherapy.

## SAMPLE SELECTION CRITERIA

Study includes: -

- The patients having head and neck cancer only.
- The patients receiving radiotherapy (Teletherapy) only.
- Patients of age more than 18 years.
- Patients who will be able to speak and understand Hindi language.
- Patients who are willing to participate in the study.

## SAMPLING TECHNIQUE

Sampling technique is defined as the process of selecting individual members or a subset of population to make statistical inferences from them and estimates characteristics of the whole population.

Sampling technique used in this study was purposive technique which is a part of non-probability sampling techniques. In purposive sampling researcher might decide purposely to select people who are judged to be particularly knowledgeable about the issues under study.

## SAMPLING SIZE

A sample size calculation is based on effect size of pilot study as there was no similar study found on extensive review of literature. Based on the design, intervention, availability of subjects, feasibility and time duration provided for data collection. Researcher decided to use 50 patients for conducting study.

The sample size is calculated as under comparison of two proportions –

$$N = \frac{[Z\left(1-\frac{\alpha}{2}\right)\sqrt{2p(1-p)} + Z(1-\beta)\sqrt{p1q1+p2q2}\,]2}{(p1+p2\,)2}$$

$$p = \frac{P_1 + P_2}{2}$$

$P_1$ = proportion of knowledge and practices before interventions = 0.4

$P_2$ = proportion of knowledge and practices after interventions = 0.6

α = 5% level of significance = Z(1-α/2) = 1.96 and Z(1-β) = 0.842 at 80% power

q = 1 – p

According to this formula n = **48.8** so patients was taken n = **50** patients.

## DEVELOPMENT AND DESCRIPTION OF TOOL

The most essential and crucial aspect of any investigation or research is the collection of information, which gives important data for the study. The formal procedures researchers develop to guide the collection of data in a standardized fashion. Th type of data collection tool required depends upon the nature of the data to be gathered to answer the research question.

The tool for data collection were self-structured and were developed by reviewing literatures, journals, opinion of experts and consulting with guide and co-guides.

It consists of following sections:

**Section A:** Description of socio-demographic data (age, gender, education, income, occupation, rural/ urban residents)

**Section B:** Self-structured knowledge questionnaire was used to assess knowledge of patients receiving radiotherapy regarding prevention of oral mucositis of total 20 multiple choice questions related to definition, clinical

manifestation, diagnosis, treatment and preventive measures. One mark was given to right answer and zero mark given to wrong answer. There was no negative marking. Knowledge level were categorized as poor (score<10), average (score 11-15) and good (score 16-20).

| Level of knowledge | Score | Percentage |
|---|---|---|
| Poor | 0 – 10 | 0 – 50% |
| Average | 11 – 15 | 51 – 75% |
| Good | 16 – 20 | 76 – 100% |

**Section C:** Self-structured expressed practices rating scale was used to assess the level of expressed practices among patients receiving radiotherapy regarding prevention of oral mucositis. The tool consists 20 questions related to brushing, mouthwash, diet, habits and checkups.

| Level of expressed practices | Score | Percentage |
|---|---|---|
| Poor | 20 – 40 | 0 – 50% |
| Average | 41 – 50 | 51 – 75% |
| Good | 51 – 60 | 76 – 100% |

Questions were divided into two groups –

**Positive items (from question number 1 to 12 and 17 to 19) –** Each always answer response was given a score of three, each sometimes answer response was given a score of two and each never answer response was given a score of one.

**Negative items (from question number 13 to 16 and 20) –** Each always answer response was given a score of one, each sometimes answer response was given a score of two and each never answer response was given a score of three. There was no negative marking. Level of expressed practices were categorized as poor (score 20-40), average (score 41-50) and good (score 51-60).

## ETHICAL CONSIDERATION

To conduct the study Ethical Permission was obtained from Institutional Ethical Committee.

- Ethical approval was taken from institutional ethical committee AIIMS, Jodhpur.

- Written informed consent was obtained from each study subjects involved in the study.

- All the subjects were informed about their participation in the research, objectives of the study, duration of their involvement and probable use of findings of the study.

- Confidentiality of data was maintained and the study subjects were given full autonomy to withdraw from the study at any time.

## CONTENT VALIDITY

The content validity of the tool was established by taking expert's opinion. The tool was circulated to experts in the field of medical surgical nursing. After getting their valuable suggestion the necessary modifications were made in the tool under guidance of guide.

1. Self-structured knowledge questionnaire tool's content validity was determined by scale content validity index (SCVI) (validity 0.90). Which means tool was valid as validity (SCVI) ranges from 0.83 to 1.

2. Self-structured expressed practices questionnaire tool's content validity was determined by scale content validity index (SCVI) (validity 0.96). Which means tool was valid as validity (SCVI) ranges from 0.83 to 1.

## RELIABILITY

1. Self-structured knowledge questionnaire tool's internal consistency was determined by Kuder Richardson 20 (reliability 0.81). Which means tool was reliable as acceptable reliability ranges from 0.70 to 1.

2. Self-structured expressed practices questionnaire tool's internal consistency was determined by Cronbach's Alpha (reliability 0.77). Which means tool was reliable as acceptable reliability ranges from 0.70 to 1.

## PILOT STUDY

“Pilot study is the study which carried out at the end of the planning phase of research, in order to explore and test the research elements.”

Pilot study was conducted among 10 patients receiving radiotherapy at radiation unit, AIIMS Jodhpur. Data collection for pilot study was completed in two weeks from August 31st, 2020 to September 12th, 2020.

The main objectives were:

- To assess feasibility of the study.
- To assess the practicability of the study.
- To determine the reliability of data collection tool.
- To determine the understanding and language clarity of tool.

Result of the pilot study indicated that study was found feasible, practical and language of data collection tool was clear and understandable to caregivers. During pilot study no as such major problem encountered. Average 5-10 minutes were taken to collect data from each patient. These patients were excluded during main data collection of the study.

## METHOD OF DATA COLLECTION

Data collection methods are scientific in procedure calling for different skills. The choice of data collection method is determined by context and minimum cost enough for the purpose of the study. In this study, the method of data collection was face-to-face structured interview. Structured face-to-face interview is a data collection method when the interviewer directly communicates with the respondent in accordance with the prepared questionnaire.

## PROCEDURE OF DATA COLLECTION

Data collection is the systematic, precise gathering of information which are related to research purpose or specific objectives, questions or hypothesis of a study.

Procedure of data collection as follows:

1. Ethical approval for the current study was taken from the institutional ethical committee. The process of data collection was explained to head and neck cancer patients and informed written consent was obtained from the patients for conducting the study. Confidentiality regarding the data was assured so as to get cooperation throughout the procedure of data collection.
2. Patients were selected through non-probability purposive sampling technique.
3. First 50 head and neck cancer patients were selected for the study.

4. The investigator introduces herself and explained the purpose of the study to the patients.
5. Socio-demographic data was obtained from the patients who participated in video assisted educational program.
6. Initially assessed the knowledge and expressed practices of patients about oral mucositis by using self-structured questionnaire for knowledge and rating scale for expressed practices by interview technique for pre-test. This was served as the baseline data.
7. Each interview took approximately 5 - 10 minutes to complete the self-structured questionnaire and rating scale.
8. A 4 minutes 15 seconds video assisted educational program (video is self-made and validity of video was obtained) on oral mucositis was delivered in Hindi. It had covered –

- Introduction of self and the oral mucositis.
- Causes of the oral mucositis.
- Assessment and diagnosis of the oral mucositis.
- Dietary management in oral mucositis.
- Oral hygiene and brushing.
- Mouthwash in oral mucositis prevention.
- Prohibition of smoking, alcohol and other substances.
- Follows ups.

9. Then, again knowledge with self-structured questionnaire and expressed practice with self-structured rating scale were assessed after 7 days by structured interview.

## PLAN FOR DATA ANALYSIS

Data were entered into master sheet and SPSS 20 version used for the descriptive and inferential statistical analysis. Such as:

a. Descriptive statistical method:

- Mean
- Frequency
- Percentage
- Standard deviation

b. Inferential statistical method:

- Fisher's exact test to check the association.
- Paired t-test was used to compare pre-test and post-test.

## SUMMARY

This chapter deal with the research methodology. Quantitative research approach and pre-experimental research design were used in this study. Study was conducted at Radiation Unit, AIIMS, Jodhpur, Rajasthan. Data were collected by the structured interview from 50 patients receiving radiotherapy were selected using Purposive sampling technique. Self-structured knowledge questionnaire and self-structured rating scale were used to collect the data from the patients. Collected data were entered into master sheet and SPSS 20 version was used for the descriptive and inferential statistical analysis.

# CHAPTER – IV
# ANALYSIS AND INTERPRETATION

# ANALYSIS AND INTERPRETATION OF DATA

***'Every second of everyday, our senses bring in way too much data than we can possibly process in our brain'***

***Peter Diamandis***

Data analysis is a dynamic process that involves interaction between the researcher and his experience of the data, whether is communicated orally or in writing. Analysis define as the computation of the calculate along with searching for patterns of relationships that exists among the data groups.

Analysis and interpretation of data was done in accordance with the objectives of the study and hypothesis of the study. Data was categorised and analysed using statistical package for social sciences (SPSS) version 20. Quantitative data analysis was done with the help of descriptive statistics i.e. mean, percentage, frequency and standard deviation. In inferential statistics, parametric test like paired t-test was used to assess the research hypothesis and effectiveness of video assisted educational program on knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy and non-parametric test like fisher's exact test was used to assess the association of patient's knowledge and expressed practices with selected socio-demographic variables. Probability (p-value) less than 0.05 was considered statistically significant and less than 0.001 was considered as highly statistically significant.

**The presentation of the data organized and arranges in the following sections:**

**SECTION I:** Description of socio demographic variables of patients receiving radiotherapy.

**SECTION II:** Assessment of pre-test and post-test level of knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

**SECTION III:** Effectiveness of video assisted educational program on knowledge score regarding oral mucositis prevention among patients receiving radiotherapy by comparing the pre-test and post-test level of knowledge.

**SECTION IV:** Effectiveness of video assisted educational program on expressed practices score regarding oral mucositis prevention among patients receiving radiotherapy by comparing the pre-test and post-test level of expressed practices.

**SECTION V:** Association of level of knowledge regarding oral mucositis prevention among patients receiving radiotherapy with the selected socio-demographic variables.

**SECTION VI:** Association of level of expressed practices regarding oral mucositis prevention among patients receiving radiotherapy with the selected socio-demographic variables.

**SECTION VII:** Correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test and post-test.

**SECTION I:** Description of socio demographic variables of patients receiving radiotherapy.

**TABLE 1:** Frequency and percentage distribution of patient as per socio-demographic variables.

**N=50**

| Socio-demographic variables | Frequency (f) | Percentage (%) |
|---|---|---|
| Age: | | |
| a. 18-39 years | 8 | 16 |
| b. 40-59 years | 14 | 28 |
| c. 60-69 years | 18 | 36 |
| d. More than 70 years | 10 | 20 |
| Gender: | | |
| a. Male | 28 | 56 |
| b. Female | 22 | 44 |
| Educational level: | | |
| a. Illiterate | 10 | 20 |
| b. Primary school | 17 | 34 |
| c. High school | 13 | 26 |
| d. Graduate and above | 10 | 20 |
| Occupation: | | |
| a. Farmer | 10 | 20 |
| b. Housewife | 13 | 26 |
| c. Private job | 11 | 22 |
| d. Government job | 14 | 28 |
| e. Others/self-employment | 2 | 4 |
| Family income (per month): | | |
| a. ≤10000 Rs | 6 | 12 |
| b. 10001-15000Rs | 9 | 18 |
| c. 15001-20000Rs | 14 | 28 |
| d. ≥20001Rs | 21 | 42 |
| Residential area: | | |
| a. Urban | 35 | 70 |
| b. Rural | 15 | 30 |

Data presented in table 1 and figure 3 – 8 depicts the socio-demographic details of the patients under study. About 36% of the patients were of age group of 60-69 years. Majority of patients (56%) were male whereas 44% patients were female. Nearly one third (34%) of patients were educated upto primary level and about 28% were having government job. Family income wise 42% patients were having more than 20000Rs per month. Majority of the patients (70%) were living in urban area.

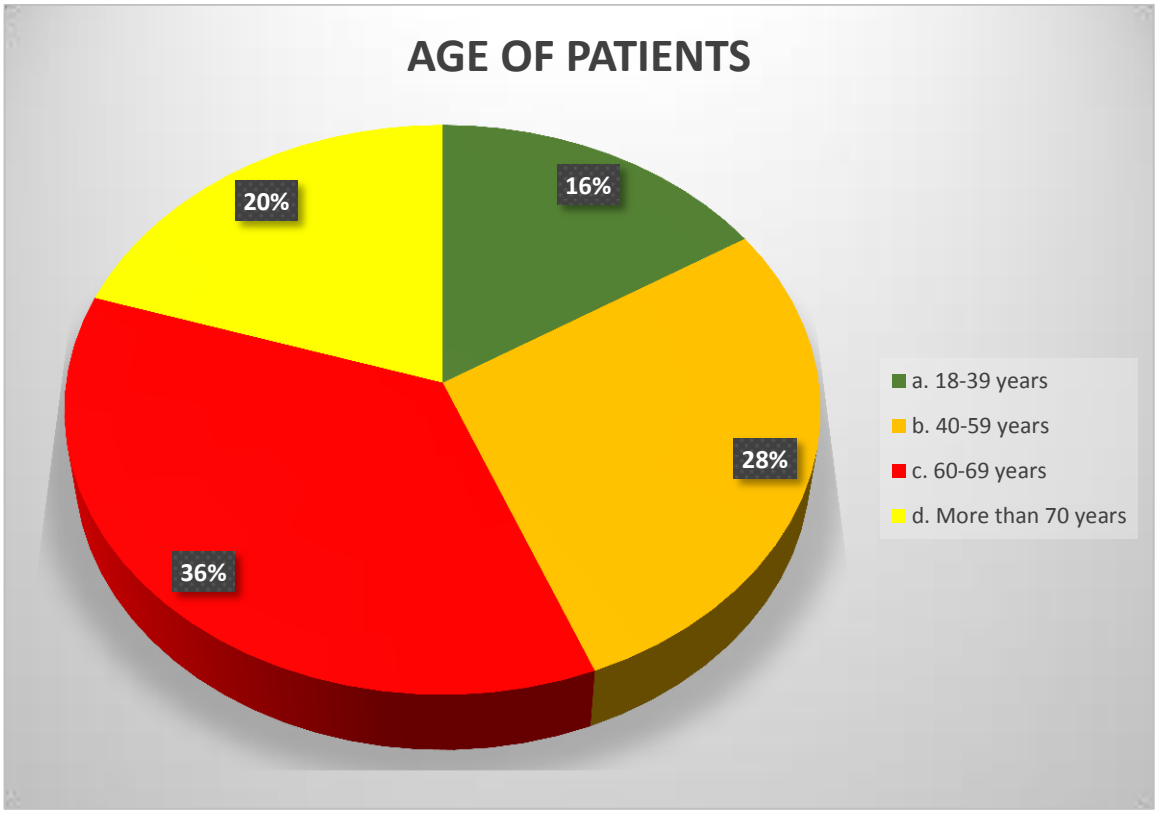


**Figure 4: Pie chart showing percentage distribution of age of patients receiving radiotherapy.**

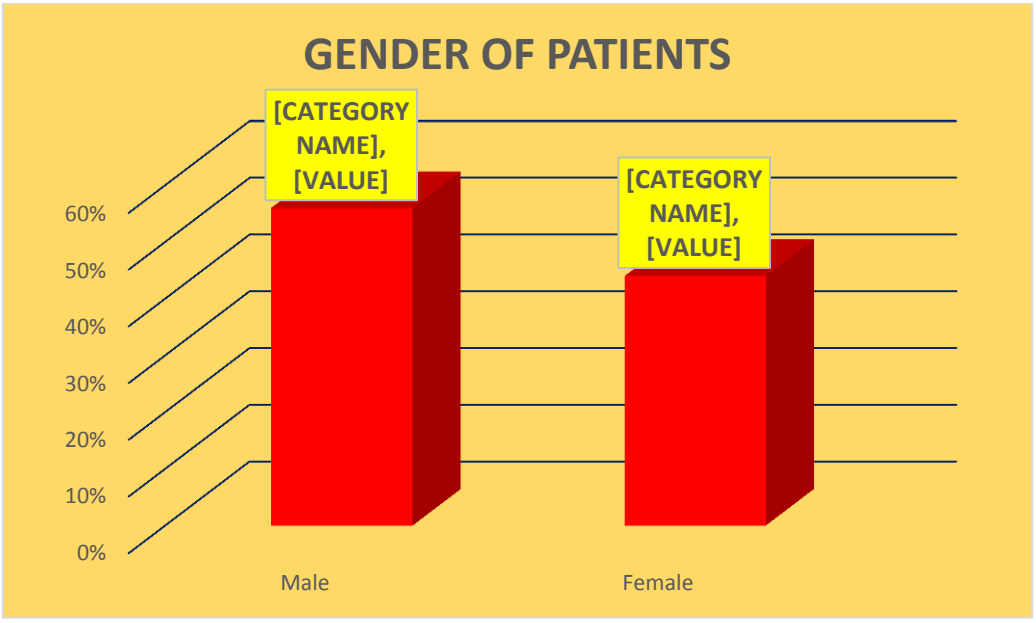


**Figure 5: Bar diagram showing percentage distribution of gender of patients receiving radiotherapy.**

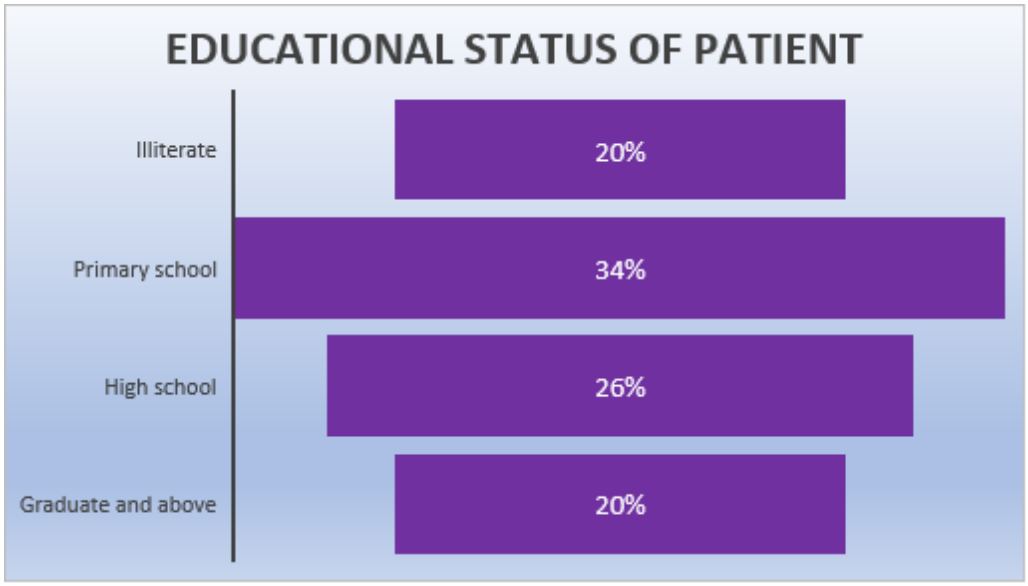


**Figure 6: Funnel chart showing percentage distribution of educational status of patients receiving radiotherapy.**

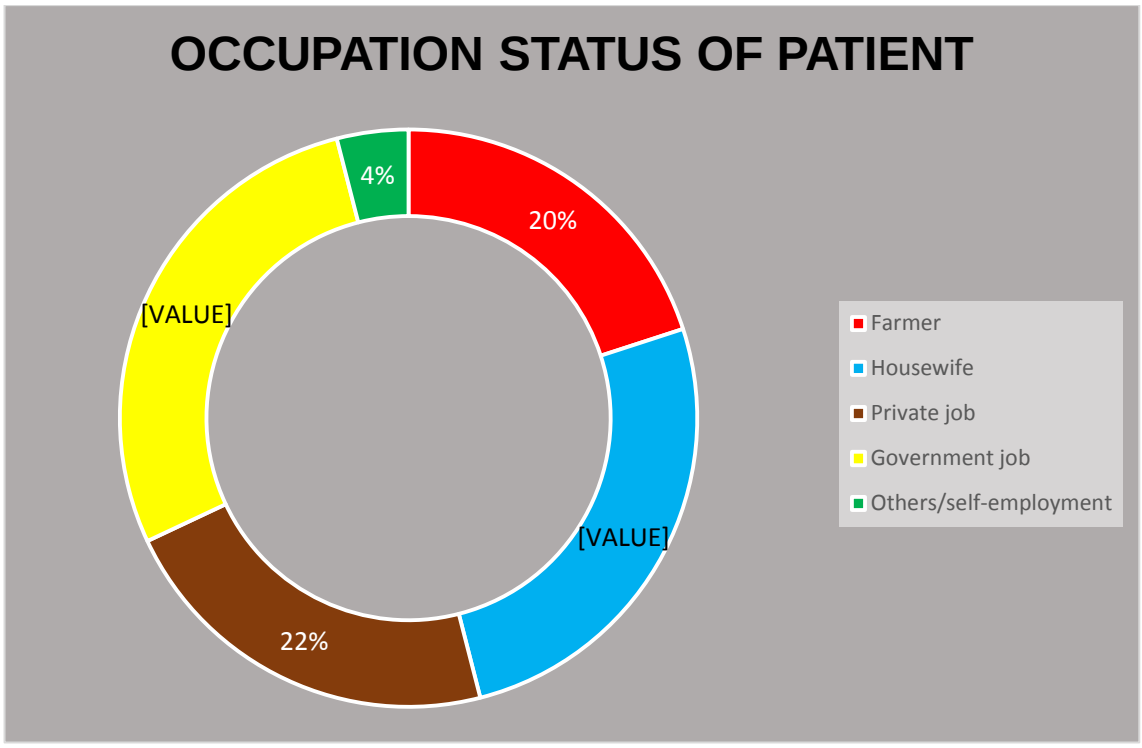


**Figure 7: Pie chart showing percentage distribution of occupational status of patients receiving radiotherapy.**

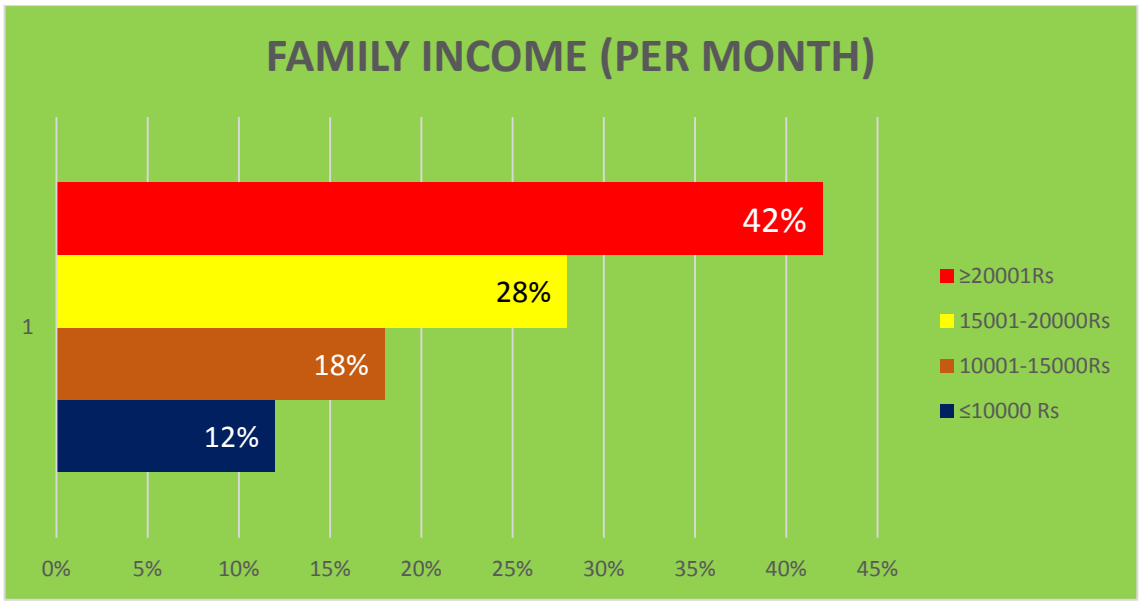


**Figure 8: Bar diagram showing percentage distribution of family income (per month) of patients receiving radiotherapy.**

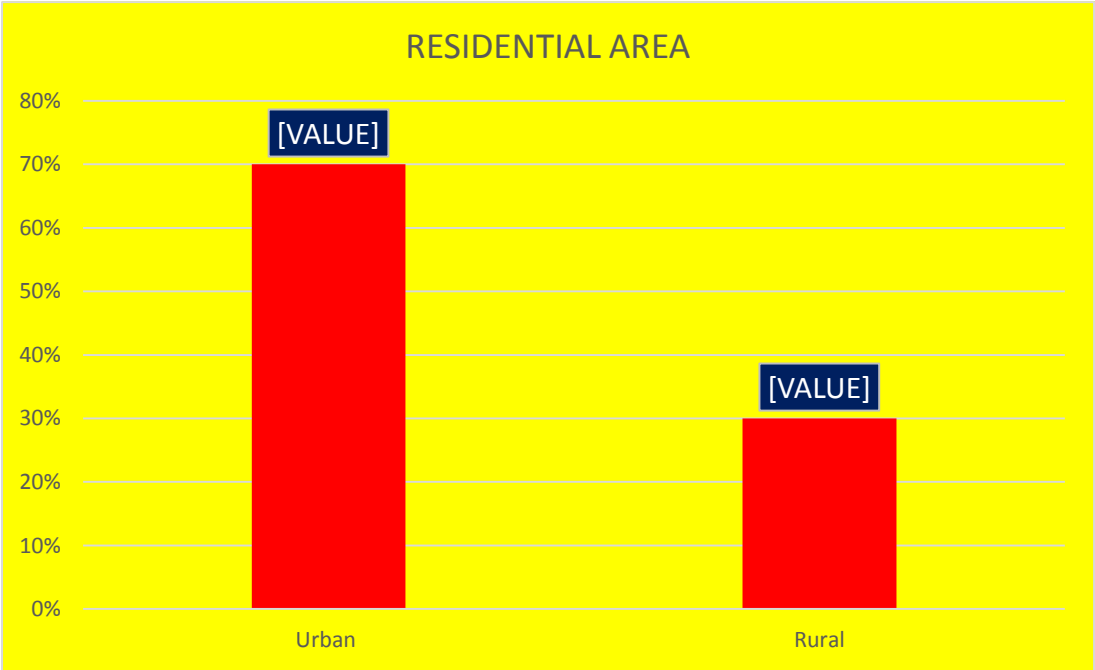


**Figure 9: Bar diagram showing percentage distribution of residential area of patients receiving radiotherapy.**

**SECTION II:** Assessment of pre-test and post-test level of knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

**TABLE-2:** Level of knowledge regarding oral mucositis prevention among patients receiving radiotherapy.

**N=50**

| Level of knowledge | Frequency f (%) | | Mean ±SD | |
|---|---|---|---|---|
| | Pre-test | Post-test | Pre-test | Post-test |
| Poor (0-10) | 17 (34) | 11 (22) | | |
| Average (11-15) | 24 (48) | 25 (50) | 11.18±4.84 | 12.64±4.62 |
| Good (16-20) | 9 (18) | 14 (28) | | |

*Maximum score – 20, Minimum score – 0*

Data presented in table 2 and figure 9 depicts mean and standard deviation in pre-test and post-test level of knowledge. In pre-test 48% of patient had average knowledge and 18% patient had good knowledge whereas in post-test 50% of patient had average knowledge and 22% of patient had poor knowledge.

The table shows that the mean post-test level of knowledge (12.64±4.62) was higher than the pre-test level of knowledge (11.18±4.84). This shows that video-assisted educational program was effective in improving knowledge regarding oral mucositis prevention among patients receiving radiotherapy.

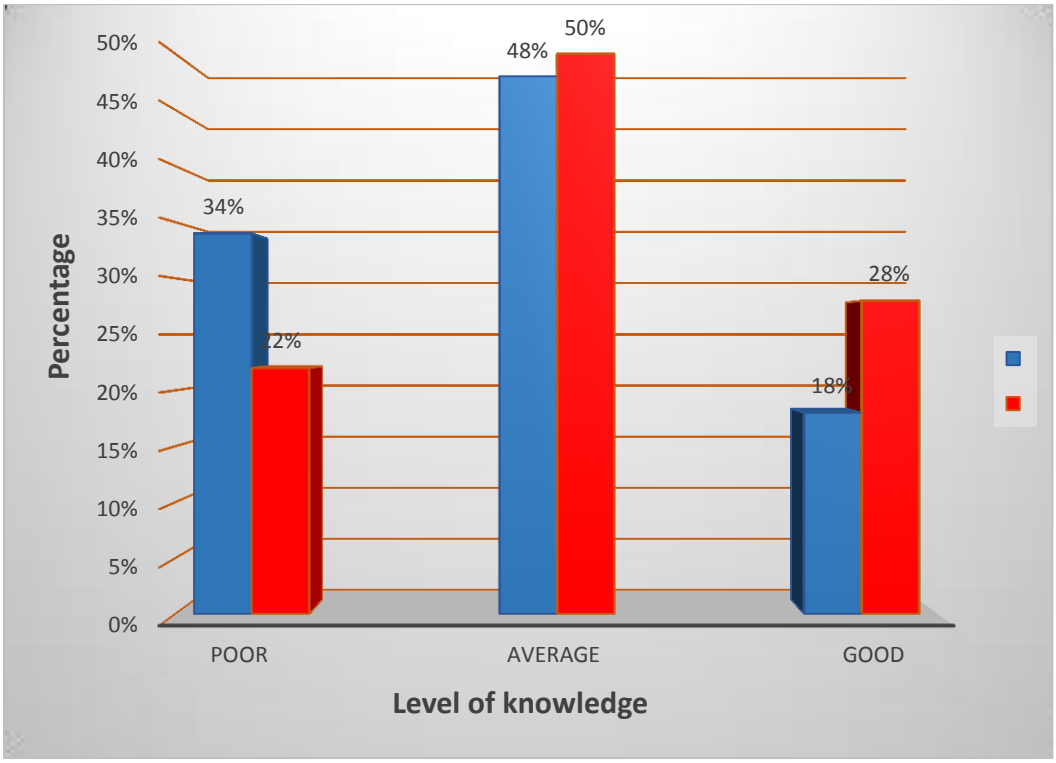


**Figure 10: Bar diagram showing pre-test and post-test level of knowledge among patients receiving radiotherapy.**

**TABLE-3:** Level of expressed practices regarding oral mucositis prevention among patients receiving radiotherapy.

**N=50**

| Level of expressed practices | Frequency f (%) | | Mean ±SD | |
|---|---|---|---|---|
| | Pre-test | Post-test | Pre-test | Post-test |
| Poor (20-40) | 15 (30) | 8 (16) | | |
| Average (41-50) | 23 (46) | 29 (58) | 43.3±9.63 | 45.62±8.10 |
| Good (51-60) | 12 (24) | 13 (26) | | |

*Maximum score – 60, Minimum score - 20*

Data presented in table 3 and figure 10 depicts mean and standard deviation in pre-test and post-test level of expressed practices. In pre-test 46% of patient had average expressed practices and 30% of patient had poor expressed practices whereas in post-test 58% of patient had average expressed practices and 16% of patient had poor expressed practices.

The table shows that the mean post-test level of expressed practices (45.62±8.10) was higher than the pre-test level of expressed practices (43.3±9.63). This shows that video-assisted educational program was effective in improving practices regarding oral mucositis prevention among patients receiving radiotherapy.

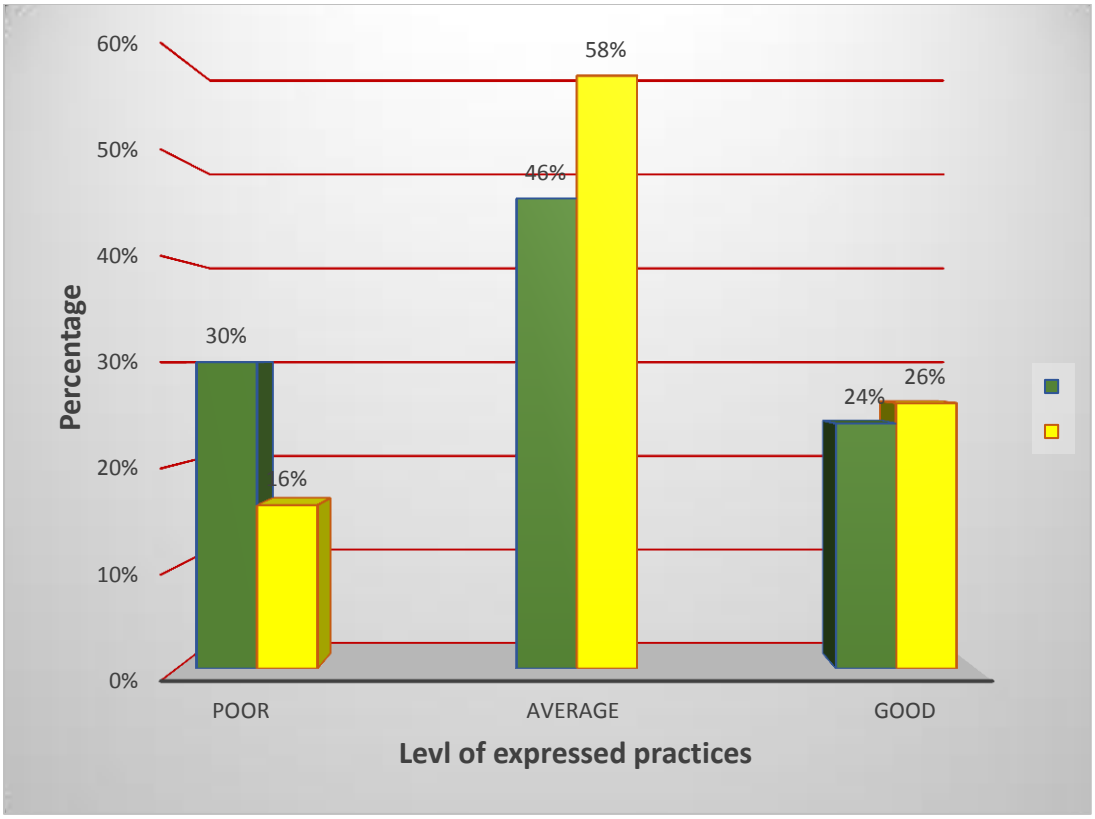


**Figure 11: Bar diagram showing pre-test and post-test level of expressed practices among patients receiving radiotherapy.**

**SECTION III:** Effectiveness of video assisted educational program on knowledge score regarding oral mucositis prevention among patients receiving radiotherapy by comparing the pre-test and post-test level of knowledge.

**TABLE-4:** Comparison of knowledge score between pre-test and post-test regarding oral mucositis prevention among patients receiving radiotherapy.

**N=50**

| | **Mean ± SD** | **df** | **t** | **p** |
|---|---|---|---|---|
| **Pre-test** | 11.18±4.84 | | | |
| | | 49 | 4.54 | 0.000* |
| **Post-test** | 12.64±4.62 | | | |

*(level of significance p<0.05), *- significant*

Data presented in table 4 depicts that the comparison of pre-test and post-test level of knowledge. The table shows that the mean post-test level of knowledge (12.64±4.62) was higher than the pre-test level of knowledge (11.18±4.84). For testing the hypothesis, paired t-test was used and findings revealed that there was a highly significant (p 0.00) difference observed between the pre-test level of knowledge and post-test level of knowledge.

Hence researcher rejected the null hypothesis ($H_{01}$) and concluded that video-assisted educational programmed was effective in improving the knowledge regarding oral mucositis prevention among patients receiving radiotherapy.

**SECTION IV:** Effectiveness of video assisted educational program on expressed practices score regarding oral mucositis prevention among patients receiving radiotherapy by comparing the pre-test and post-test level of expressed practices.

**TABLE-5:** Comparison of expressed practices score between pre-test and post-test regarding oral mucositis prevention among patients receiving radiotherapy.

**N=50**

| | **Mean ± SD** | **df** | **t** | **p** |
|---|---|---|---|---|
| **Pre-test** | 43.3±9.63 | | | |
| | | 49 | 6.08 | 0.000* |
| **Post-test** | 45.62±8.10 | | | |

*(level of significance p<0.05), *- significant*

Data presented in table 5 shows the comparison of pre-test and post-test level of expressed practices. The table shows that the mean post-test level of expressed practices (45.62±8.10) was higher than the pre-test level of expressed practices (43.3±9.63). For testing the hypothesis, paired t-test was used and findings revealed that there was a highly significant (p 0.00) difference observed between the pre-test level of expressed practices and post-test level of expressed practices.

Hence researcher rejected the null hypothesis ($H_{02}$) and concluded that video-assisted educational programmed was effective in improving the practices regarding oral mucositis prevention among patients receiving radiotherapy.

**SECTION V:** Association of level of knowledge regarding oral mucositis prevention among patients receiving radiotherapy with the selected socio-demographic variables.

**TABLE-6:** Association of level of knowledge among patients with selected socio-demographic variables.

**N=50**

| Socio- demographic variables | Level of knowledge | | | df | Fisher's exact test | p |
|---|---|---|---|---|---|---|
| | Poor | Average | Good | | | |
| Age: | | | | | | |
| a. 18-39 years | 2 | 4 | 2 | 6 | 2.48 | $0.90^{NS}$ |
| b. 40-59 years | 6 | 5 | 3 | | | |
| c. 60-69 years | 6 | 10 | 2 | | | |
| d. More than 70 years | 3 | 5 | 2 | | | |
| Gender: | | | | | | |
| a. Male | 11 | 10 | 7 | 2 | 4.07 | $0.15^{NS}$ |
| b. Female | 6 | 14 | 2 | | | |
| Educational level: | | | | | | |
| a. Illiterate | 6 | 3 | 1 | 6 | 6.15 | $0.4^{NS}$ |
| b. Primary school | 7 | 7 | 3 | | | |
| c. High school | 2 | 8 | 3 | | | |
| d. Graduate and above | 2 | 6 | 2 | | | |
| Occupation: | | | | | | |
| a. Farmer | 4 | 4 | 2 | 8 | 4.22 | $0.64^{NS}$ |
| b. Housemaker | 6 | 4 | 3 | | | |
| c. Private job | 4 | 5 | 2 | | | |
| d. Government job | 2 | 10 | 2 | | | |
| e. Others/self-employment | 1 | 1 | - | | | |
| Family income (per month): | | | | | | |
| a. ≤10000 Rs | 3 | 2 | 1 | 6 | 4.14 | $0.69^{NS}$ |
| b. 10001-15000Rs | 5 | 3 | 1 | | | |
| c. 15001-20000Rs | 4 | 8 | 2 | | | |
| d. ≥20001Rs | 5 | 11 | 5 | | | |
| Residential area: | | | | | | |
| a. Urban | 10 | 18 | 7 | 2 | 1.49 | $0.51^{NS}$ |
| b. Rural | 7 | 6 | 2 | | | |

*(level of significance p<0.05), $^{NS}$- non significant*

Table 6 depicts that association of level of knowledge with selected socio-demographic variables using fisher's exact test. The findings clearly reveal that there is no significant association of level of knowledge with age, gender, education level of patient, occupation of patient, family income and residential area regarding prevention of oral mucositis among patients receiving radiotherapy.

Thus, the null hypothesis ($H_{03}$) was accepted because there was no significant association of level of knowledge with socio-demographic variables regarding prevention of oral mucositis among patients receiving radiotherapy.

**SECTION VI:** Association of level of expressed practices regarding oral mucositis prevention among patients receiving radiotherapy with the selected socio-demographic variables.

**TABLE-7:** Association of level of expressed practices among patients receiving radiotherapy with selected socio-demographical variables.

**N=50**

| Socio- demographic variables | Level of expressed practices | | | df | Fisher's exact test | p |
|---|---|---|---|---|---|---|
| | Poor | Average | Good | | | |
| Age: | | | | | | |
| a. 18-39 years | 1 | 5 | 2 | 6 | 2.40 | 0.92$^{NS}$ |
| b. 40-59 years | 4 | 7 | 3 | | | |
| c. 60-69 years | 6 | 7 | 5 | | | |
| d. More than 70 years | 4 | 4 | 2 | | | |
| Gender: | | | | | | |
| a. Male | 12 | 10 | 6 | 2 | 5.15 | 0.07$^{NS}$ |
| b. Female | 3 | 13 | 6 | | | |
| Educational level: | | | | | | |
| a. Illiterate | 6 | 3 | 1 | 6 | 10.06 | 0.11$^{NS}$ |
| b. Primary school | 6 | 7 | 4 | | | |
| c. High school | 2 | 9 | 2 | | | |
| d. Graduate and above | 1 | 4 | 5 | | | |
| Occupation: | | | | | | |
| a. Farmer | 5 | 5 | - | 8 | 13.54 | 0.05* |
| b. Housemaker | 5 | 4 | 4 | | | |
| c. Private job | 2 | 5 | 4 | | | |
| d. Government job | 1 | 9 | 4 | | | |
| e. Others/self-employment | 2 | - | - | | | |
| Family income (per month): | | | | | | |
| a. ≤10000 Rs | 2 | 2 | 2 | 6 | 3.08 | 0.84$^{NS}$ |
| b. 10001-15000Rs | 3 | 5 | 1 | | | |
| c. 15001-20000Rs | 4 | 5 | 5 | | | |
| d. ≥20001Rs | 6 | 11 | 4 | | | |
| Residential area: | | | | | | |
| a. Urban | 11 | 16 | 8 | 2 | 0.24 | 1.00$^{NS}$ |
| b. Rural | 4 | 7 | 4 | | | |

*(level of significance p<0.05), $^{NS}$- non significant, *- significant*

Table 7 depicts that association of level of expressed practices with selected socio-demographic variables using fisher's exact test. The findings reveal that there is significant association of level of expressed practices with occupation of patient (p=0.05) whereas other socio-demographic variables i.e. age, gender, education level of patient, family income per month and residential area were not significant.

Thus, the null hypothesis ($H_{04}$) was partially rejected because there is significant association of level of expressed practices with occupation of patient.

**SECTION VII:** Correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test and post-test.

**TABLE-8:** Correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test.

| | **Mean** | **SD** | **r** |
|---|---|---|---|
| Knowledge | 11.18 | 4.84 | 0.54 |
| Expressed practices | 43.3 | 9.63 | |

Table 8 depicts the correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in pre-test using Karl Pearson formula.

The result show moderately positive correlation between knowledge and expressed practices in pre-test at r = 0.54 so the null hypothesis ($H_{05}$) was rejected and research hypothesis was accepted.

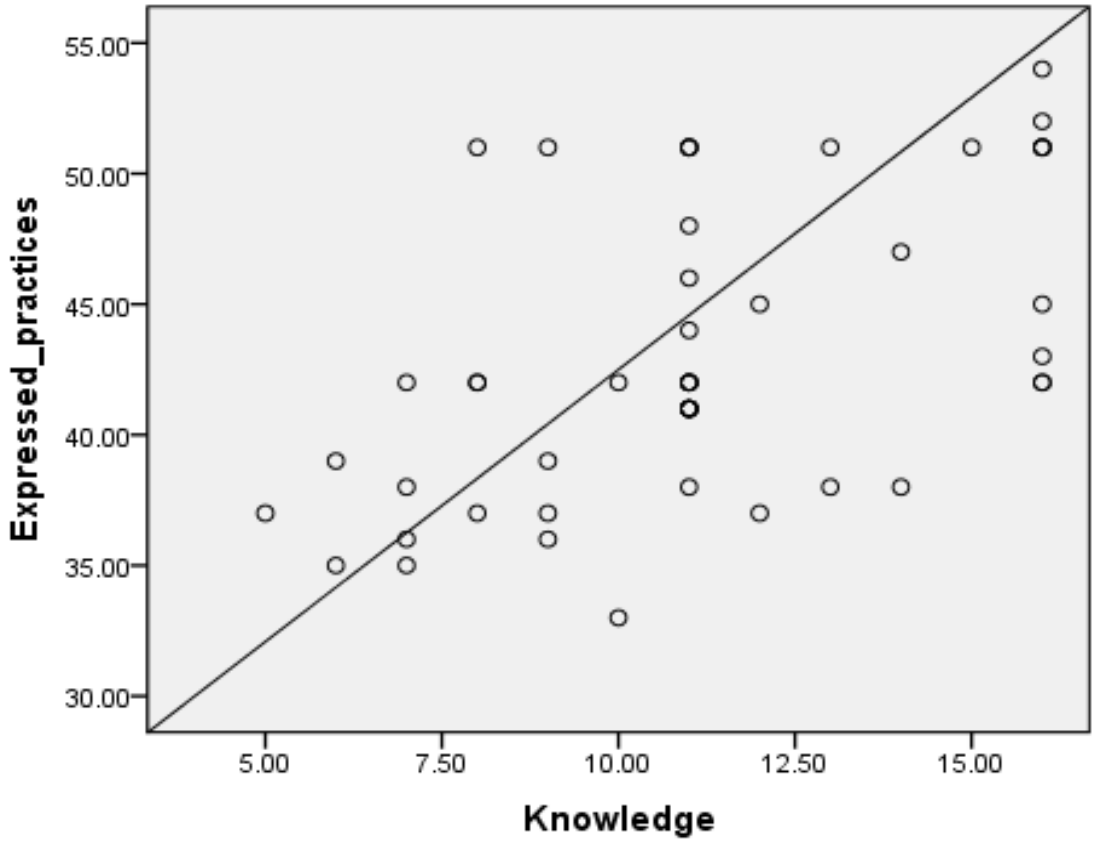


**Figure 12: Scatter plot diagram showing correlation between knowledge and expressed practices among patients receiving radiotherapy in pre-test.**

**TABLE-9:** Correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in post-test.

| | Mean | SD | r |
|---|---|---|---|
| Knowledge | 12.64 | 4.62 | 0.76 |
| Expressed practices | 45.62 | 8.10 | |

Table 9 depicts the correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy in post-test using Karl Pearson formula.

The result show strong positive correlation between knowledge and expressed practices in post-test at r = 0.76 so the null hypothesis ($H_{06}$) was rejected and research hypothesis was accepted.

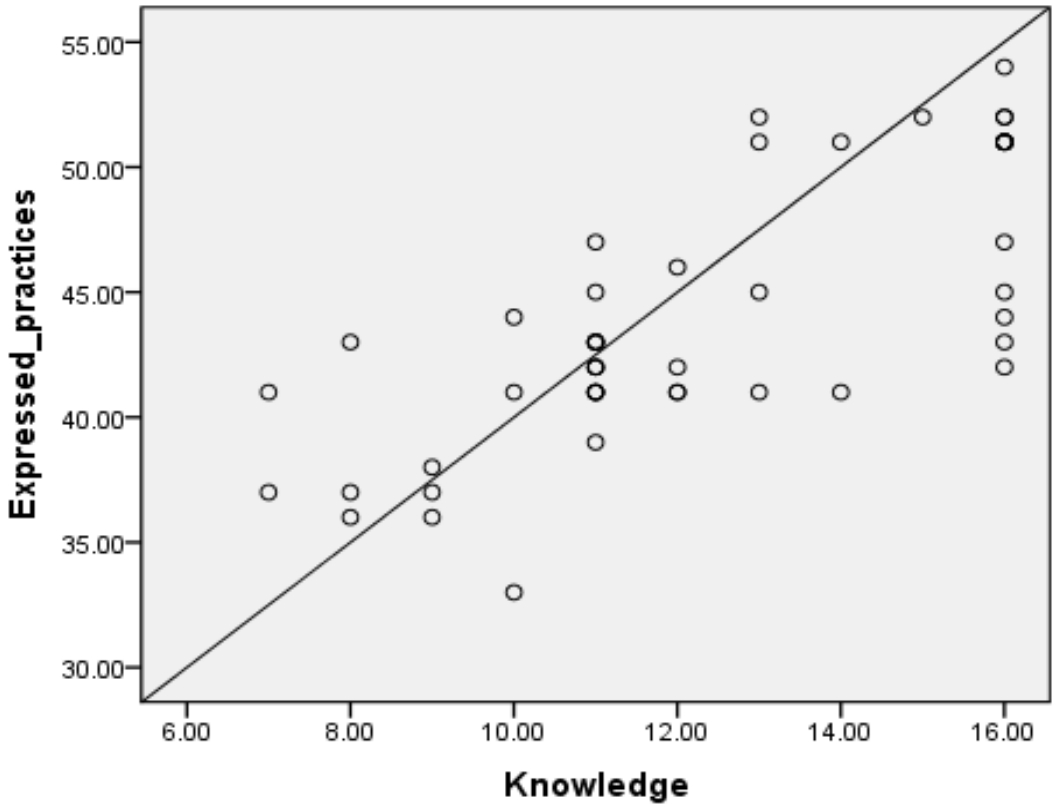


**Figure 13: Scatter plot diagram showing correlation between knowledge and expressed practices among patients receiving radiotherapy in post-test.**

## MAJOR FINDINGS OF THE STUDY

- About 36% of the patients were of age group of 60-69 years. Majority of patients (56%) were male whereas 44% patients were female. Nearly one third (34%) of patients were educated upto primary level and about 28% were having government job. Family income wise 42% patients were having more than 20000Rs. Majority of the patients 70% were living in urban area.
- The findings clearly reveal that, mean post-test level of knowledge (12.64±4.62) was higher than the mean pre-test level of knowledge (11.18±4.84).
- The findings clearly reveal that, mean post-test level of expressed practices (45.62±8.10) was higher than the mean pre-test level of expressed practices (43.3±9.63).
- The findings depict that, there was a highly significant (t=4.54, p 0.00) difference between the pre-test level of knowledge and post-test level of knowledge. Hence, video assisted educational program on oral mucositis prevention was effective in improving knowledge among patients receiving radiotherapy.
- The findings reveal that, there was a highly significant (t=6.08, p 0.00) difference between pre-test level of expressed practices and post-test level of expressed practices. Hence, video assisted educational program on oral mucositis prevention was effective in improving expressed practices among patients receiving radiotherapy.

- The association of level of knowledge with selected socio-demographic variables using fisher's exact test revealed that there was no significant association of knowledge with socio-demographic variables.
- The association of level of expressed practices with selected socio-demographic variables using fisher's exact test revealed that there was significant association of expressed practices with occupation of the patient at $p<0.05$.
- The correlation between knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy using Karl Pearson formula reveal that moderately positive correlation between knowledge and expressed practices in pre-test at $r = 0.54$ whereas strong positive correlation between knowledge and expressed practices in post-test at $r = 0.76$.

# DISCUSSION

# DISCUSSION

***'Discussion is an exchange of knowledge'***

***Robert Quillen***

Cancer is a group of diseases involving cell growth abnormally with the possibilities to spread or invade to other parts of the body. Throughout our lives, healthy cells in our bodies divide and replace themselves in a controlled manner/fashion. Cancer is second most frequent reason of death in developed countries after cardiovascular diseases and epidemiological evidence points to this moves in the less developed countries.[30]

Head and neck cancer is a group of cancers that begins in the mouth, nose, throat, larynx, sinuses, or salivary glands. The commonest type of head and neck cancer is squamous cell carcinoma (squamous cell cancer).[31]

Oral mucositis refers to erythematosus and soreness lesions of the oral mucosa observed in patients with head and neck cancer receiving radiotherapy. It is inflammatory, painful, often sored condition; and is acute side effect or complication of radiotherapy. This condition affects almost most of the patients of head and neck cancer receiving radiation therapy (RT). Education is the important phenomena in preventing and managing the oral mucositis condition which occurred due to the radiotherapy. It is necessary to increase the knowledge and practices of patients with head and neck cancer to preventing the oral mucositis.[32]

The present study was conducted to assess the effectiveness of video assisted educational program on knowledge and expressed practices regarding oral mucositis prevention among patients receiving radiotherapy. It was carried out at Radiation Unit, AIIMS, Jodhpur, among 50 patients suffering from head and neck cancer receiving radiotherapy.

According to the results of the study, in socio-demographic variables, the patients of oral mucositis were higher in male (56%) than female (44%), which was similar to the results of a study concluded in Jordan regarding knowledge and practices regarding oral mucositis among cancer patients.[15]

About 36% of the patients were of age group between 60-69 years. Nearly one third (34%) of patients were educated upto primary level and about 28% were having government job. Family income wise 42% patients were having more than 20000Rs. Majority of the patients 70% were living in urban area.

The results of the present study indicated that there is a significant difference between the mean of patient's knowledge before and after the intervention ($p<0.05$), therefore video assisted educational program increased patient's knowledge after intervention. The findings of the research indicate that using new educational method for educate head and neck cancer patients can increase their knowledge. According to study of Yüce UO et al. the results revealed that the experimental group had decreased frequency of oral mucositis as compare to control group at $p<0.05$.[22] According to Carin M J

Potting et at the result of the study revealed that there was statistically significant difference observed in the knowledge and skill scores before and after the implementing education in the experimental group, whereas there was no statistically significant difference observed in the control group, where no education was provided to the participants.[28]

The study showed that there was no significant association of knowledge with the socio-demographic variables. It also revealed that video assisted educational program was effective in improving the knowledge of patients with t-value of 4.54 and $p<0.05$ which was indistinguishable to the results of a study conducted by Sanjeev Khanagar et al. in which there was significant improvement in the knowledge regarding oral health among the caregivers and status of oral hygiene of the elderly residents after the intervention. This research clearly revealed that effective implementation of education should be included by the nurses in the routine care of patients who were reeiving radiotherapy among head and neck cancer patients.[24]

The results of the study showed that there was significant improvement in practices of head and neck cancer patients after the intervention. Carin M J Potting et al. carried out a study to evaluate the effectiveness of education on knowledge and practices. The study showed that there was statistically significant difference observed in the knowledge and skill scores before and after the implementing education in the experimental group, whereas there

was no statistically significant difference observed in the control group, where no education was provided to the participants.[28]

The study showed that there was significant association of expressed practices with occupation of patient. Acharya Radha et al. carried out a study to evaluate knowledge and practices regarding oral care among the patients who were receiving chemotherapy. The result showed that there was significant association was found between socio-demograhic data with practice and age and education of the patient.[1]

The study finding shows that moderately positive correlation (0.54) of knowledge with expressed practices in pre-test and strong positive correlation (0.76) of knowledge with expressed practices in post-test. Raghavendra Shanbhog et al. carried out a study to evaluate knowledge, attitude and practices regarding oral hygiene among handicapped children. The result of the study showed that correlation of knowledge with attitude was highly significant with negative value and and practices with attitude was also highly significant with negative value at $p<0.001$.[33]

Oral mucositis can be effectively managed and prevented by taking various preventive measures such as taking soft diet, good oral hygiene etc. The study findings indicate that there is significant increase in knowledge and expressed practices after implementation of video assisted educational program. Proper and good education is essential for facilitating quality learning among the

patients of any age group, cast, creed, religion and region. It is the process of achieving knowledge, values, skills, beliefs and moral habits.

# CHAPTER – V

# SUMMARY, CONCLUSION AND RECOMMENDATION

# SUMMARY, CONCLUSION AND RECOMMENDATION

***'In the end we come up with a conclusion that we need to start from somewhere'***

***Deyth Banger***

This chapter provides a brief account of the present study including conclusion drawn from the findings, limitation, implication of the study and recommendation for future research.

A pre-experimental pre-test post-test one group design was conducted to assess the effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among head and neck cancer patients receiving radiotherapy. A total of 50 patients were selected for the study using purposive sampling. The patients who were willing to participate and fulfilling the inclusion criteria were selected for the study. Head and neck cancer patient's knowledge and expressed practices were assessed before intervention and intervention in the form of video assisted educational program was given to the patients. Post-test was taken after minimum 7 days of interval. Data was collected from September 2020 to October 2020 and analyzed using SPSS version 20 with appropriate descriptive and inferential statistic.

## STRENGTH OF THE STUDY

- Video on oral mucositis was prepared from brief review of literature, books and suggestions form the doctors of the Radiation Unit.
- Emphasis on correct knowledge and practices related to oral mucositis which can help the patients to prevent the oral mucositis during radiation therapy.
- Video was given to the Radiation Unit Department by which they can educate the head and neck cancer patients receiving radiotherapy regarding prevention of oral mucositis.
- Present study would help to understand level of knowledge and expressed practices of head and neck cancer patients receiving radiotherapy.
- The study also emphasizes the need of education to improve the knowledge and expressed practices of head and neck cancer patients receiving radiotherapy.

## LIMITATION OF THE STUDY

- Research findings cannot be generalized as only single setting was selected to conduct the study.
- The study did not use control group. The investigator had no control over the events that took place between pre-test and post-test.

## IMPLICATION IN NURSING

Nursing is an art and science. It is based upon the current knowledge i.e. frequently changing with discoveries, ideas, techniques, methodologies and motivations. When nurses combine the science and art of nursing in their practice, the quality of care given to clients is at the level of excellence that benefits innumerable clients. The findings of the study have implications on nursing practice, nursing education, nursing administration and nursing research.

### a) Nursing practice:

Oral mucositis is the one of the most common side-effect of the radiation therapy among head and neck cancer patients. Therefore, the knowledge regarding oral mucositis prevention, its management and using preventive practices is required to be promoted among head and neck cancer patients who were receiving radiotherapy. Nurses should provide health education about the oral mucositis management and prevention. This video can be used for teaching purpose for patient undergoing radiotherapy.

### b) Nursing education:

The student nurses of today are the care providers, educators, administrators, supervisors of the future; this study has implication in nursing education as well. The nursing education should emphasis on the importance of health education regarding prevention and management of

oral mucositis in patients receiving radiotherapy by the student nurses. New innovative ways should be taught to them. Nursing education should emphasis on more on preparing prospective nurse to impart the information on oral mucositis, its management and prevention. Structured video to be included in the curriculum.

**c) Nursing administration:**

The concept of extended and expanded role of the nurse offers many opportunities as a nurse administrator to improve the quality of life of cancer patients. The nurse administrator should co-ordinate her work along with preventive, curative and rehabilitative aspect of care. The nurse administrator at various levels of health care delivery system should focus their attention to make public aware about the oral mucositis, its management and prevention.

**d) Nursing research:**

One of the main goals of the nursing research is to contribute the knowledge to the body of nursing to broaden and expand the scope of nursing. This is feasible only if nurses are taking initiative to conduct further more research. Research should be done to discover the various innovative and new methods to increase the knowledge and practices in order to prevent, manage and cure the oral mucositis among head and neck cancer patients.

## RECOMMENDATIONS

On the basis of findings of the study, it is recommended that:

- A study can be conducted on a large sample and in different setting thereby findings can be generalized for a large population.
- A study can be conducted on interventional and control group by using interventions like information booklet and structured teaching programs regarding prevention and management of oral mucositis.
- A study with an intervention of longer duration can be evaluated to get a clear picture.
- Randomized control trial can be done.
- Multi-center study can be done.
- A study can be conducted for the future research to seek systematic research and intervention to discover a better understanding of disease and prevention.
- Video can be used to impart continuing education program for the nursing personnel.

## CONCLUSION

The result of the study indicates that after implementation of video assisted educational program patients gained knowledge and improved practices regarding prevention of oral mucositis. Physician and nurses should always pay attention to educate the patients suffering from head and neck cancer about the oral mucositis, its sign and symptoms, management and prevention. Video assisted educational program will help in bridging this gap and will further help in improvement of overall knowledge and practices of patients.

# REFERENCES

# REFERENCES


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# ANNEXURE

## ANNEXURE – I

## ETHICAL CLEARANCE CERTIFICATE

अखिल भारतीय आयुर्विज्ञान संस्थान, जोधपुर
**All India Institute of Medical Sciences, Jodhpur**
संस्थागत नैतिकता समिति
**Institutional Ethics Committee**

**No. AIIMS/IEC/2020/** 308 | **Date: 01/06/2020**

**ETHICAL CLEARANCE CERTIFICATE**

Certificate Reference Number: **AIIMS/IEC/2020-21/** 3000

Project title: **"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS Jodhpur"**

| | |
|---|---|
| Nature of Project: | **Research Project Submitted for Expedited Review** |
| Submitted as: | **Student Research Project, as a part of Academic Programme** |
| Investigator: | **Jyoti Rathore** |
| Supervisor: | **Mrs. Vandna Pandey** |
| Co-Supervisor: | **Dr. Puneet Pareek & Dr. Ashok Kumar** |

Institutional Ethics Committee after thorough consideration accorded its approval on above project.

The investigator may therefore commence the research from the date of this certificate, using the reference number indicated above.

Please note that the AIIMS IEC must be informed immediately of:

- Any material change in the conditions or undertakings mentioned in the document.
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research.

The Principal Investigator must report to the AIIMS IEC in the prescribed format, where applicable, bi-annually, and at the end of the project, in respect of ethical compliance.

AIIMS IEC retains the right to withdraw or amend this if:

- Any unethical principle or practices are revealed or suspected
- Relevant information has been withheld or misrepresented

AIIMS IEC shall have an access to any information or data at any time during the course or after completion of the project.

Please Note that this approval will be rectified whenever it is possible to hold a meeting in person of the Institutional Ethics Committee. It is possible that the PI may be asked to give more clarifications or the Institutional Ethics Committee may withhold the project. The Institutional Ethics Committee is adopting this procedure due to COVID-19 (Corona Virus) situation.

If the Institutional Ethics Committee does not get back to you, this means your project has been cleared by the IEC.

On behalf of Ethics Committee, I wish you success in your research.

**Dr. Praveen Sharma**
**Member Secretary**

Member secretary
Institutional Ethics Committee
AIIMS,Jodhpur

Basni Phase-2, Jodhpur, Rajasthan-342005, **Website:** www.aiimsjodhpur.edu.in, **Phone:** 0291-2740741 Extn. 3109
**Email:** ethicscommittee@aiimsjodhpur.edu.in

**ANNEXURE – II**

**CERTIFICATE OF CONTENT VALIDITY**

**COLLEGE OF NURSING**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR**

**RESEARCH PROJECT**

**CERTIFICATE OF CONTENT VALIDITY**

I, Dr. / Mr. / Mrs. ……. hereby certify that the tool for data collection of the research project titled **"**Knowledge and medication adherence regarding hypertension among hypertensive patients attending UHTC, Pratap Nagar, Jodhpur with a view to develop an information booklet regarding self management of Hypertension." prepared by Neha Rai is found to be valid and up to date.

Place:

Date:

Signature & Seal of Validator

## ANNEXURE – III

## LIST OF EXPERTS FOR TOOL VALIDATION

1. Ms. Milan Tirwa

   Associate Professor,

   College of Nursing, AIIMS, Delhi

2. Ms. Smita Das

   Associate Professor,

   College of Nursing, AIIMS, Delhi

3. Mrs. Vasantha Kalyani

   Associate Professor,

   College of Nursing, AIIMS, Rishikesh

4. Ms. Ujjwal Dahiya

   Associate Professor,

   College of Nursing, AIIMS, Delhi

5. Mrs. Nimarta

   Assistant Professor,

   College of Nursing, AIIMS, Jodhpur

6. Mr. Nipin Kalal

   Assistant Professor,

   College of Nursing, AIIMS, Jodhpur

7. Ms. Ruchika Heera

   Assistant Professor,

   College of Nursing, AIIMS, Rishikesh

## ANNEXURE – IV

## LANGUAGE VALIDATION CERTIFICATE

COLLEGE OF NURSING

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR

RESEARCH PROJECT

CERTIFICATE OF ENGLISH LANGUAGE VALIDITY OF THESIS

I, Dr./Mr./Mrs. Rakhi Vyas hereby certify that the thesis titled ***"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur"*** prepared by **Jyoti Rathore, M.Sc. Nursing** is found to be valid and up to date.

Place: Jodhpur

Date: 1/2/2021

Rakhi Vyas 1/2/2021

DR. RAKHI VYAS
ASSISTANT PROFESSOR
DEPARTMENT OF ENGLISH
JAI NARAIN VYAS UNIVERSITY
JODHPUR (RAJ.)

Signature & Seal of Validator

COLLEGE OF NURSING

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR

RESEARCH PROJECT

## CERTIFICATE OF ENGLISH LANGUAGE VALIDITY OF RESEARCH TOOLS

I, Dr./~~Mr./Mrs~~ Rakhi Vyas hereby certify that the tool for data collection of the research project titled ***"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur"*** prepared by **Jyoti Rathore, M.Sc. Nursing** is found to be valid and up to date.

Place: Jodhpur

Date: 1/2/2021

Rakhi Vyas 1/2/2021

DR. RAKHI VYAS
ASSISTANT PROFESSOR
DEPARTMENT OF ENGLISH
JAI NARAIN VYAS UNIVERSITY
JODHPUR (RAJ.)

Signature & Seal of Validator

COLLEGE OF NURSING

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR

RESEARCH PROJECT

## CERTIFICATE OF HINDI LANGUAGE VALIDITY OF RESEARCH TOOLS

I, Dr./Mr./Mrs. Prof. (Dr.) NARENDRA MISHRA hereby certify that the tool for data collection of the research project titled ***"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur"*** prepared by **Jyoti Rathore, M.Sc. Nursing** is found to be valid and up to date.

Place: Jodhpur

Date: 29/01/2021

29/1/2021

प्रोफेसर एवं अध्यक्ष
हिन्दी विभाग
जयनारायण व्यास विश्वविद्यालय
जोधपुर

Signature & Seal of Validator

## ANNEXURE – V

## VIDEO VALIDATION CERTIFICATE

COLLEGE OF NURSING

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR

RESEARCH PROJECT

CERTIFICATE FOR VALIDATION OF VIDEO

I, ~~Dr./~~Mr./~~Mrs~~ Nipin Kalal hereby certify that the self-made video for research on ***"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur"*** prepared by **Jyoti Rathore, M.Sc. Nursing** is found to be valid and up to date.

Place: Jodhpur

Date: 1/2/2021

Signature & Seal of Validator

निपिन कलाल
Nipin Kalal
सहायक आचार्य
Assistant Professor
नर्सिंग महाविद्यालय
College of Nursing
अखिल भारतीय आयुर्विज्ञान संस्थान, जोधपुर
All India Institute of Medical Sciences, Jodhpur

**COLLEGE OF NURSING**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR**

**RESEARCH PROJECT**

**CERTIFICATE FOR VALIDATION OF VIDEO**

I, Dr./Mr./Mrs. NIMARIA hereby certify that the self-made video for research on ***"Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur"*** prepared by **Jyoti Rathore, M.Sc. Nursing** is found to be valid and up to date.

Place: Jodhpur

Date:

Signature & Seal of Validator

Nimaria
सहायक आचार्य
Assistant Professor
नर्सिंग महाविद्यालय
College of Nursing
अखिल भारतीय आयुर्विज्ञान संस्थान, जोधपुर
All India Institute of Medical Sciences, Jodhpur

## ANNEXURE – VI

## INFORMED CONSENT FORM

Title of the research study: “Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur.”

Name of the Investigator: Ms. Jyoti Rathore (M.Sc. Nursing)

Participant Identification No. :

I, _____D/o or s/o _____R/o _____ give my full, free, voluntary consent to be a part of this study “Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur. ” The information and nature of which has been explained to me in my own language to my full satisfaction. I confirm that I have the opportunity to ask question.

I understand that my participation is voluntary and I am aware of my rights to option out of the study at any time without giving any reason.

I understand that information collected about me will be looked at by responsible individual from AIIMS, Jodhpur and information will be kept confidentiality. I give permission for these individuals to collect the information.

Date: _____

Place: _____ Signature/Left thumb impression

This is to certify that the above consent has been obtained in my presence.

Date: _____

Place: _____ Signature of Researcher

## ANNEXURE – VII

### सूचित प्रपत्र

**शोध अध्ययन का शीर्षक: इफेक्टिवनेस ऑफ़ वीडियो असिस्टेड एजुकेशनल प्रोग्राम रिगार्डिंग प्रिवेंशन ऑफ़ ओरल म्यूकोसिटिस इन टर्म्स ऑफ़ नॉलेज एंड एक्सप्रेस्ड प्रैक्टिसेज अमंग पेशेंट्स रिसीविंग रेडियोथेरेपी एट एम्स, जोधपुर।**

**अन्वेषक का नाम:** सुश्री ज्योति राठौड (एम.एससी नर्सिंग)

**प्रतिभागी की पहचान संख्या**:

मैं, _____ D / o या s / o _____ R / o _____ को इस अध्ययन का हिस्सा बनने के लिए अपनी पूर्ण, निःशुल्क, स्वैच्छिक सहमति देता हूं **"इफेक्टिवनेस ऑफ़ वीडियो असिस्टेड एजुकेशनल प्रोग्राम रिगार्डिंग प्रिवेंशन ऑफ़ ओरल म्यूकोसिटिस इन टर्म्स ऑफ़ नॉलेज एंड एक्सप्रेस्ड प्रैक्टिसेज अमंग पेशेंट्स रिसीविंग रेडियोथेरेपी एट एम्स, जोधपुर।"** जिसकी जानकारी और प्रकृति मुझे अपनी भाषा में मेरी पूर्ण संतुष्टि के लिए समझाई गई है। मैं पुष्टि करता हूं कि मुझे सवाल पूछने का अवसर मिला है।

मैं समझता हूं कि मेरी भागीदारी स्वैच्छिक है और मुझे बिना किसी कारण के किसी भी समय अध्ययन से बाहर निकलने के अपने अधिकारों के बारे में पता है।

मैं समझता हूं कि मेरे बारे में एकत्रित जानकारी को एम्स, जोधपुर के जिम्मेदार व्यक्ति द्वारा देखा जाएगा और जानकारी को गोपनीयता रखा जाएगा। मैं इन व्यक्तियों को अपने जानकारी एकत्र करने की अनुमति देता हूं।

दिनांक: _____

स्थान: _____ हस्ताक्षर / बाएं अंगूठे का निशान

यह प्रमाणित करना है कि मेरी उपस्थिति में उपरोक्त सहमति प्राप्त की गई है।

दिनांक: _____

स्थान: _____ हस्ताक्षर पीजी छात्र

## ANNEXURE – VIII

## BLUE PRINT FOR SELF-STRUCTURED KNOWLEDGE QUESTIONNAIRE AND EXPRESSED PRACTICES RATING SCALE

**The self-structured Questionnaire and Rating scale consists of three sections-**

SECTION A: - Consist of 6 items of Socio-Demographic Data.

SECTION B: - Consist of 20 items of knowledge questionnaire.

SECTION C: - Consist of 20 items of expressed practice rating scale.

## BLUE PRINT FOR SELF-STRUCTURED KNOWLEDGE QUESTIONNAIRE

| Section-B | Area/ Component | Question no. | Total Questions | Percentage |
|---|---|---|---|---|
| Part - I | Oral mucositis | 1 - 2 | 2 | 10.00% |
| Part - II | Sign and symptoms and diagnosis | 3 - 6 | 4 | 20.00% |
| Part- III | Diet | 7 - 9 | 3 | 15.00% |
| Part - IV | Treatment | 10 - 12 | 3 | 15.00% |
| Part - V | Oral hygiene | 13 - 18 | 6 | 30.00% |
| Part - VI | Prevention | 19 – 20 | 2 | 10.00% |
| | **Total** | **20** | **20** | **100.0%** |

## BLUE PRINT FOR SELF-STRUCTURED EXPRESSED PRACTICES

## RATING SCALE

| Section C | Area/ components | Question No. | Total Question | Percentage |
|---|---|---|---|---|
| Part – I | Brushing | 1 - 7 | 7 | 35.00% |
| Part – II | Medicated mouthwash | 8 – 10 | 3 | 15.00% |
| Part - III | Diet | 11 – 12 | 2 | 10.00% |
| Part - IV | Habits | 13 – 16 | 4 | 20.00% |
| Part - V | Checkups | 17 – 20 | 4 | 20.00% |
| | **Total** | **20** | **20** | **100.0%** |

## ANNEXURE – IX

## Section – A

## Socio – Demographic Data

**Instructions:**

Thank you for the participation in this study. Please read the following questions carefully and choose the correct answer from the choices given and indicate by placing a tick (✓) mark in the brackets provided. Please answer for all the items.

1. Age of patient -
a. 18 to 39 year
b. 40 to 59 years
c. 60 to 69 years
d. > 70 years ( )

2. Gender of patient –
a. Male
b. Female ( )

3. Education level of patient -
a. Illiterate
b. Primary school
c. High school
d. Graduate and above ( )

4**.** Occupation of patient -

a. Farmer

b. Housewife

c. Private job

d. Government job

e. others / self-employment ( )

5. Family income (Per month)-

a. ≤ 10000 Rs

b. 10001 – 15000 Rs

c. 15001 – 20000 Rs

d. ≥20000Rs ( )

6. Residential area-

a. Urban

b. Rural ( )

## Section – B

## Self-structured Knowledge Questionnaire

### A. Knowledge related to oral mucositis -

1. What is mucositis?

a. It is the inflammation of the skin.

b. It is the painful inflammation and ulceration of the mucous membranes lining in the mouth.

c. It is the painful inflammation of the teeth.

d. It is the inflammation of eyes. ( )

2. Which one of the following's side effect can leads to oral mucositis?

a. Radiation therapy

b. Food allergy

c. Substance abuse

d. Malnourishment ( )

### B. Knowledge related to sign and symptoms and diagnosis of oral mucositis -

3. Which of the following are the clinical manifestation of oral mucositis?

a. Pain in teeth

b. Protrusion of tongue

c. Painful ulcer

d. Vomiting ( )

4. When the sign and symptoms of oral mucositis occurs after radiation therapy?

a. After 1 week

b. After 2 weeks

c. After 3 weeks

d. After 4 weeks ( )

5. How to assess the oral mucositis?

a. By oral assessment

b. By skin assessment

c. By eye assessment

d. By mental status examination ( )

6. How to diagnose the oral mucositis?

a. Assessing vomiting

b. Ulcer formation

c. Swelling of lips

d. Assessment of heart sounds ( )

**C. Knowledge related to diet of oral mucositis -**

7. Which type of diet is recommended in oral mucositis?

a. Soft diet

b. Solid diet

c. Fatty diet

d. Spicy diet ( )

8. Which type of food to be avoided in oral mucositis?

a. Vegetables

b. Spicy food

c. Cereals

d. Fruits ( )

9. Which type of edible product to be given in oral mucositis?

a. Pickle

b. Chocolates

c. Banana

d. Alcohol drinks ( )

**D. Knowledge related to treatment of oral mucositis -**

10. What is the treatment of oral mucositis?

a. Behaviour therapy

b. Exercise

c. Maintenance of oral hygiene

d. Application of hot water ( )

11. What is oral cryotherapy in oral mucositis?

a. It is the treatment for the skin disorder.

b. It is applying hot applications in the mouth.

c. It is the cooling of the mouth with cold consumables.

d. It is the effective management for the heart disease. ( )

12. How to drink water to reduce pain in oral mucositis?

a. By using spoon

b. By using glass

c. By using straw

d. By using bowl ( )

**E. Knowledge related to oral hygiene of oral mucositis -**

13. How many times in a day mouthwash is necessary in oral mucositis?

a. 1 – 2 times

b. 2 – 3 times

c. 3 – 4 times

d. 5 – 6 times ( )

14. After how many hours mouthwash is necessary?

a. Every 2 hours

b. Every 4 hours

c. Every 6 hours

d. Every 8 hours ( )

15. Which type of mouthwash solution is used in oral mucositis?

a. Lemon water mouthwash

b. Soap mouthwash

c. Plan water mouthwash

d. Soda-bi-carbonate solution ( )

16. How many teaspoons of soda-bi-carbonate in 200ml of water is used for preparation of mouthwash for prevention of oral mucositis?

a. 1 teaspoon

b. 2 teaspoon

c. 3 teaspoon

d. 4 teaspoon ( )

17. What is appropriate time for changing brush?

a. 2 months

b. 3 months

c. 4 months

d. 5 months ( )

18. What is minimum time required for good brushing?

a. Half minutes

b. 1 minutes

c. 2 minutes

d. 3 minutes ( )

**F. Knowledge related to prevention of oral mucositis -**

19. Which of the following is necessary in preventing oral mucositis?

a. Regular hand washing

b. Regular oral hygiene

c. Daily bath

d. Daily exercises ( )

20. How many times (minimum) brushings is necessary in preventing oral mucositis?

a. Not necessary

b. 2 times

c. 3 times

d. 4 times ( )

# KEY

1. b) It is the painful inflammation and ulceration of the mucous membranes lining in the mouth.
2. a) Radiation therapy
3. c) Painful ulcer
4. b) After 2 weeks
5. a) By oral assessment
6. b) Ulcer formation
7. a) Soft diet
8. b) Spicy food
9. c) Banana
10. c) Maintenance of oral hygiene
11. c) It is the cooling of the mouth with cold consumables
12. c) By using straw
13. d) 5 – 6 times
14. b) Every 4 hours
15. d) Soda-bi-carbonate solution
16. b) 2 teaspoons
17. b) 3 months
18. c) 2 minutes
19. b) Regular oral hygiene
20. b) 2 times

## Section – B

## Self-structured Expressed practices Rating scale

| S.no | Questions | Always | Sometimes | Never |
|---|---|---|---|---|
| **Expressed practices related to brushing -** | | | | |
| Do you- | | | | |
| 1. | Brush daily | | | |
| 2. | Use soft brush for brushing | | | |
| 3. | Use toothpaste/mouth powder for cleaning the teeth | | | |
| 4. | Clean your tongue while brushing | | | |
| 5. | Brush before going to bed at night | | | |
| 6. | Cover your brush regularly after brushing | | | |
| 7. | Brush after taking meals | | | |
| **Expressed practices related to medicated mouthwash -** | | | | |
| 8. | Use soda-bi-carbonate mouthwash for oral hygiene | | | |
| 9. | Mouthwash in every 4 hours in daytime and before going to bed at night time | | | |
| 10. | Use approximately 2 teaspoon of soda-bi-carbonate solution in every mouthwash | | | |
| **Expressed practices related to diet -** | | | | |
| 11. | Take soft meals to prevent or treat oral mucositis | | | |
| 12. | Take fruits and vegetables regularly | | | |

| | | | | |
|---|---|---|---|---|
| **Expressed practices related to habits -** | | | | |
| 13. | Smoke | | | |
| 14. | Tobacco | | | |
| 15. | Take liquor | | | |
| 16. | Use any other type of substance<br>If yes, specify_____ __ | | | |
| **Expressed practices related to check - ups -** | | | | |
| 17. | Go for medical check-ups for any problem in oral cavity | | | |
| 18. | Take medicines which prescribed by doctor to treat or prevent oral mucositis | | | |
| 19. | Assess your oral cavity regularly for any changes in oral cavity | | | |
| 20. | Take over the counter drugs without consulting with doctor | | | |

# SCORING

**Scoring system for Knowledge Questionnaire -** The data will be collected through the self-structured multiple-choice questionnaire. It consists of 20 questions and total score will be 20. Each correct response will give a score of one and the wrong answer will be given the score of zero.

| Level of knowledge | Score | Percentage |
|---|---|---|
| Poor | 0 – 10 | 0 – 50% |
| Average | 11 – 15 | 51 – 75% |
| Good | 16 – 20 | 76 – 100% |

**Scoring system for Expressed practices Rating scale -** The data will be collected through the self-structured rating scale. It consists of 20 questions and total score will be 60.

**Positive items (from question number 1 to 12 and 17 to 19) –** Each always answer response will be given a score of three, each sometimes answer response will be given a score of two and each never answer response will be given a score of one.

**Negative items (from question number 13 to 16 and 20) –** Each always answer response will be given a score of one, each sometimes answer response will be given a score of two and each never answer response will be given a score of three.

| Level of expressed practices | Score | Percentage |
|---|---|---|
| Poor | 20 – 40 | 0 – 50% |
| Average | 41 – 50 | 51 – 75% |
| Good | 51 – 60 | 76 – 100% |

**ANNEXURE – X**

## खंड एक

## सामाजिक जनसांख्यिकीय डेटा

**अनुदेश :**

कृपया निम्नलिखित प्रश्नों को ध्यान से पढ़ें और दिए गए विकल्पों में से सही उत्तर चुनें और प्रदान की गई कोष्ठक में एक टिक (tick) चिह्न रखकर इंगित करें। कृपया सभी मदों के लिए उत्तर दें।

1. रोगी की आयु –
   a. 18 से 39 वर्ष
   b. 40 से 59 वर्ष
   c. 60 से 69 वर्ष
   d. 70 वर्षों से अधिक ( )

2. रोगी का लिंग –
   a. पुरुष
   b. महिला ( )

3. रोगी का शिक्षा स्तर –
   a. निरक्षर
   b. प्राथमिक विद्यालय
   c. उच्च विद्यालय
   d. स्नातक और उससे ऊपर ( )

4. रोगी का व्यवासाय –

a. किसान

b. गृहिणी

c. निजी नौकरी

d. सरकारी नौकरी

e. अन्य ( )

5. पारिवारिक आय (प्रति माह) –

a. 5000 रु या उससे कम

b. 5001 से 10000 रु

c. 10000 से 15000 रु

d. 15000 रु से ज्यादा ( )

6. आवासीय क्षेत्र -

a. शहरी

b. ग्रामीण ( )

## खंड - बी

## मुँह के छाले से संबंधित ज्ञान

- **मुँह के छाले  से संबंधित ज्ञान -**

1. मुँह के छाले क्या है?

a. यह त्वचा की सूजन है।

b. यह मुंह में अस्तर श्लेष्म झिल्ली की दर्दनाक सूजन और घाव है।

c. यह दांतों की दर्दनाक सूजन है।

d. यह आंखों की सूजन है। (  )

2. मुंह के छाले किसका दुष्प्रभाव है?

a. रेडियोथेरेपी

b. खाने से एलर्जी

c. मादक द्रव्यों का सेवन

d. कुपोषण (  )

- **मुँह के छालो के लक्षण और दुष्प्रभाव से संबंधित ज्ञान -**

3. निम्नलिखित में से कौन से मुंह के छालो के लक्षण हैं?

a. दांतों में दर्द

b. जीभ का फटना

c. दर्दनाक घाव

d. उल्टी (  )

4. निम्नलिखित में से कौन से विकिरण चिकित्सा के बाद होने वाले मुंह के छालो के लक्षण हैं?

a. 1 सप्ताह के बाद

b. 2 सप्ताह के बाद

c. 3 सप्ताह के बाद

d. 4 सप्ताह के बाद ( )

5. मुंह के छालो का आकलन कैसे करते है?

a. मुँह के मूल्यांकन द्वारा

b. त्वचा के आकलन द्वारा

c. आँख मूल्यांकन द्वारा

d. मानसिक स्थिति परीक्षा द्वारा ( )

6. मुंह के छालो का निदान कैसे करते है?

a. उल्टी का आकलन

b. घाव के बनने से

c. होंठों की सूजन

d. हृदय की आवाज़ का आकलन ( )

- **मुँह के छालो के आहार से संबंधित ज्ञान -**

7. मुँह के छालो में किस प्रकार के आहार का उपयोग किया जाता है?

a. मुलायम आहार

b. ठोस आहार

c. वसायुक्त आहार

d. मसालेदार आहार ( )

8. मुँह के छालो में किस प्रकार के भोजन से बचा जाता है?

a. सब्जियां

b. मसालेदार भोजन

c. अनाज

d. फल ( )

9. मुँह के छालो में किस प्रकार का भोजन दिया जाता है?

a. अचार

b. चॉकलेट

c. केला

d. शराब ( )

- **मुँह के छालो के उपचार से संबंधित ज्ञान -**

10. मुँह के छालो का उपचार क्या है?

a. व्यवहार चिकित्सा

b. व्यायाम

c. मुँह की स्वच्छता का रखरखाव

d. गर्म पानी का अनुप्रयोग ( )

11. मुँह के छालो में क्रायोथेरेपी क्या है?

a. यह त्वचा विकार का इलाज है।

b. यह मुंह में गर्म अनुप्रयोगों का उपयोग करना

c. यह ठंडे उपभोग के साथ मुँह को ठंडा करना।

d. यह हृदय रोग के लिए प्रभावी इलाज़ है। ( )

12. मुँह के छालो में दर्द को कम करने के लिए पानी कैसे पीते है?

a. चम्मच का उपयोग करके

b. गिलास का उपयोग करके

c. नलकी या स्ट्रॉ का उपयोग करके

d. कटोरी का उपयोग करके ( )

- **मुँह की स्वच्छता से संबंधित ज्ञान -**

13. मुंह के छालो में दिन में कितनी बार मुँह की सफाई आवश्यक है?

a. 1 - 2 बार

b. 2 - 3 बार

c. 3 - 4 बार

d. 5 - 6 बार ( )

14. मुंह के छालो में कितने घंटे बाद माउथवॉश की आवश्यकता होती है?

a. हर 2 घंटे में

b. हर 4 घंटे में

c. हर 6 घंटे में

d. हर 8 घंटे में ( )

15. मुंह के छालो में किस प्रकार के माउथवॉश का उपयोग किया जाता है?

a. नींबू पानी माउथवॉश

b. साबुन का पानी माउथवॉश

c. सादा पानी माउथवॉश

d. मीठे सोड़े का घोल ( )

16. मुंह के छालो के रोकथाम के लिए 200 मिलीलीटर पानी में कितने चम्मच सोडा-बाय-कार्बोनेट (मीठे सोड़े) का उपयोग करना चाहिए ?

a. 1 चम्मच

b. 2 चम्मच

c. 3 चम्मच

d. 4 चम्मच ( )

17. ब्रश बदलने का उपयुक्त समय क्या है?

a. 2 महीने

b. 3 महीने

c. 4 महीने

d. 5 महीने ( )

18. अच्छी ब्रशिंग के लिए न्यूनतम कितने समय की आवश्यकता होती है?

a. आधा मिनट

b. 1 मिनट

c. 2 मिनट

d. 3 मिनट ( )

- **मुँह के छालो के निवारण से संबंधित ज्ञान -**

19. मुंह के छालो की रोकथाम में निम्नलिखित में से कौन सा आवश्यक है?

a. नियमित रूप से हाथ धोना

b. नियमित रूप से मुँह की स्वच्छता

c. दैनिक स्नान

d. दैनिक व्यायाम ( )

20. मुंह के छालो को रोकने के लिए कितनी बार (न्यूनतम) ब्रशिंग करना आवश्यक है?

a. आवश्यक नहीं

b. 2 बार

c. 3 बार

d. 4 बार ( )

## खंड – सी

### मुँह के छाले से संबंधित व्यक्त किए गए अभ्यास

| क्रम संख्या | सवाल | हमेशा | कभी-कभी | कभी नहीं |
|---|---|---|---|---|
| **ब्रश करने से संबंधित व्यक्त अभ्यास -** | | | | |
| क्या आप- | | | | |
| 1. | रोजाना ब्रश करते है। | | | |
| 2. | दिन में 2 बार ब्रश करते है। | | | |
| 3. | दांतों की सफाई के लिए टूथपेस्ट/पाउडर का इस्तेमाल करते है। | | | |
| 4. | ब्रश करते समय अपनी जीभ को साफ करते है। | | | |
| 5. | रात को सोने जाने से पहले ब्रश करते है। | | | |
| 6. | ब्रश करने के बाद नियमित रूप से अपने ब्रश को कवर करते है। | | | |
| 7. | भोजन करने के बाद ब्रश करते है। | | | |
| **मेडिकेटेड माउथवॉश से संबंधित व्यक्त अभ्यास –** | | | | |
| 8. | मुँह की स्वच्छता के लिए मीठे सोड़े के घोल का उपयोग करते है। | | | |
| 9. | दिन में हर 4 घंटे में और रात को सोने से पहले माउथवॉश का उपयोग करते है। | | | |
| 10. | हर माउथवॉश में लगभग 2 चम्मच सोडा-बाय-कार्बोनेट घोल का उपयोग करते है। | | | |

| | | | | |
|---|---|---|---|---|
| **आहार से संबंधित व्यक्त अभ्यास -** | | | | |
| 11. | मुँह के छाले को रोकने या उसका इलाज करने के लिए नरम भोजन का उपयोग करते है। | | | |
| 12. | फल और सब्जियां नियमित रूप से लेते है। | | | |
| **गलत अभ्यास से संबंधित अभिव्यक्तियां -** | | | | |
| 13. | धूम्रपान करते है। | | | |
| 14. | तम्बाकू खाते है । | | | |
| 15. | शराब पीते है। | | | |
| 16. | किसी अन्य प्रकार के नशीले पदार्थ का उपयोग करते है।<br>यदि हाँ, तो उल्लिखित करे_____ | | | |
| **जांच से संबंधित व्यक्त अभ्यास -** | | | | |
| 17. | मुँह में किसी भी समस्या के लिए जांच के लिए जाते है। | | | |
| 18. | ऐसी दवाएं लेते है, जो चिकित्सक द्वारा मुँह के छाले के उपचार या रोकथाम के लिए निर्धारित की गई हों। | | | |
| 19. | मौखिक गुहा में किसी भी परिवर्तन के लिए नियमित रूप से अपने मौखिक गुहा का आकलन करते है। | | | |
| 20. | डॉक्टर के परामर्श के बिना दवाइयां लेते है। | | | |

## ANNEXURE – XI

## CODING SHEET FOR SOCIO-DEMOGRAPHIC DATA

| S.NO. | Categories | Range | Coding |
|---|---|---|---|
| 1. | Age | 18 to 39 year | 1 |
| | | 40 to 59 years | 2 |
| | | 60 to 69 years | 3 |
| | | > 70 years | 4 |
| 2. | Gender | Male | 1 |
| | | Female | 2 |
| 3. | Educational status | Illiterate | 1 |
| | | Primary school | 2 |
| | | High school | 3 |
| | | Graduate and above | 4 |
| 4. | Occupational level | Farmer | 1 |
| | | Housewife | 2 |
| | | Private job | 3 |
| | | Government job | 4 |
| | | Others / self-employment | 5 |
| 5. | Family income (Per month) | ≤ 10000 Rs | 1 |
| | | 10001 – 15000 Rs | 2 |
| | | 15001 – 20000 Rs | 3 |
| | | ≥20000Rs | 4 |
| 6. | Residential area | Urban | 1 |
| | | Rural | 2 |

## ANNEXURE – XII

## PARTICIPANT INFORMATION SHEET

**Prinipal Investigator: Miss. Jyoti Rathore**

**Title:** "Effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy at AIIMS, Jodhpur."

**Purpose:** To assess the effectiveness of video assisted educational program regarding prevention of oral mucositis in terms of knowledge and expressed practices among patients receiving radiotherapy.

**Eligibility criteria for participation: -** You are eligible for the study as because you are –

- The patients having head and neck cancer only.
- The patients receiving radiotherapy (Teletherapy) only.
- Patients of age more than 18 years.
- Patients who will be able to speak and understand Hindi language.
- Patients who are willing to participate in the study.

**Rights to participate and withdrawal:** It is completely up to you whether participate or not you participate. If you decide not to participate it will not affect the relationship with staff and treatment you receive now or in the future. You may withdraw from the study at any time and for any reason or no reason. Information that has been collected about you, prior to your withdrawal, will continue to be used in the data analysis but no new information will be collected from you.

**Risk in taking part in this study:** The study involves no risk rather than benefiting to you.

**Complaints and compensation:** You will not face any complications due to this study; still if you have any complaints as a result of this study you should contact the study investigator.

**Concerns about the conduct of this study:** This study has been approved by the Institutional Ethics Committee (IEC).

**Measure to protect confidentiality:** Only the researcher will know whether or not you are participating in this study. Any identifiable information that is collected about you in connection with this study will remain confidential and will be disclosed only with your permission, or except as required by law. Only the researcher will have access to your details and results.

**Contact person for further enquiry:** If you would like to know at any stage please do not hesitate to contact the research team.

**Thank you for taking the time to consider this study.**

**If you wish to take part, please sign the attached consent form.**

**This information sheet is for you to keep.**

# प्रतिभागी सूचना शीट

**मुख्य जाँचकर्ता:** सुश्री ज्योति राठौड

**शीर्षक:** इफेक्टिवनेस ऑफ़ वीडियो असिस्टेड एजुकेशनल प्रोग्राम रिगार्डिंग प्रिवेंशन ऑफ़ ओरल म्यूकोसिटिस इन टर्म्स ऑफ़ नॉलेज एंड एक्सप्रेस्ड प्रैक्टिसेज अमंग पेशेंट्स रिसीविंग रेडियोथेरेपी एट एम्स, जोधपुर।

**उद्देश्य:** एम्स, जोधपुर में रेडियोथेरेपी प्राप्त करने वाले रोगियों में म्यूकोसिटिस की रोकथाम के बारे में ज्ञान और व्यक्त प्रथाओं वीडियो की सहायता शैक्षिक कार्यक्रम की प्रभावशीलता से संबंधित अध्ययन का आकलन करना |

**भाग लेने के लिए योग्यता: -** आप अध्ययन के लिए पात्र हैं क्योंकि आप हैं -

1. जिन मरीजों को सिर और गर्दन का कैंसर है।
2. जिन रोगियों को रेडियोथेरेपी प्राप्त होगी।
3. जिन रोगियों की आयु 18 वर्ष से अधिक होगी।
4. मरीज अध्ययन के लिए सहमति देने को तैयार हैं।

**भाग लेने व अध्ययन के बाहर होन के अधिकार:** यह पूरी तरह से आप पर निर्भर है कि आप भाग लेते हैं या नहीं। यदि आप यह नहीं तय करते हैं कि यह आपके और अब के भविष्य में प्राप्त होने वाले स्टाफ और उपचार के साथ संबंध को प्रभावित नहीं करेगा। आप किसी भी समय और किसी भी कारण या बिना किसी कारण के अध्ययन से हट सकते हैं। आपकी निकासी से पहले आपके बारे में जो जानकारी एकत्र की गई है, उसका डेटा विश्लेषण में उपयोग किया जाता रहेगा, लेकिन आपसे कोई नई जानकारी एकत्र नहीं की जाएगी।

**इस अध्ययन में भाग लेने में जोखिम:** अध्ययन में आपको लाभान्वित करने के बजाय कोई जोखिम शामिल नहीं है।

**शिकायतें और मुआवजा:** इस अध्ययन के कारण आपको किसी भी जटिलता का सामना नहीं करना पड़ेगा; फिर भी अगर आपको इस अध्ययन के परिणामस्वरूप कोई शिकायत है, तो आपको अध्ययन अन्वेषक से संपर्क करना चाहिए।

**इस अध्ययन के संचालन के समभंद में अभिरुचि:** इस अध्ययन को संस्थागत आचार समिति (आईईसी) द्वारा अनुमोदित किया गया है।

**गोपनीयता की रक्षा के लिए उपाय:** केवल शोधकर्ता को पता होगा कि आप इस अध्ययन में भाग ले रहे हैं या नहीं। इस अध्ययन के संबंध में आपके बारे में एकत्रित की गई कोई भी पहचान योग्य जानकारी गोपनीय रहेगी और केवल आपकी अनुमति से, या कानून द्वारा आवश्यक को छोड़कर इसका खुलासा किया जाएगा। केवल शोधकर्ता के पास आपके विवरण और परिणामों तक पहुंच होगी।

**आगे की पूछताछ के लिए संपर्क व्यक्ति:** यदि आप किसी भी स्तर पर जानना चाहते हैं तो कृपया शोध टीम से संपर्क करने में संकोच न करें।

इस अध्ययन पर विचार करने के लिए समय निकालने के लिए धन्यवाद।

यदि आप भाग लेना चाहते हैं, तो कृपया संलग्न सहमति पत्र पर हस्ताक्षर करें।

यह सूचना पत्र आपके पास रखने के लिए है।

## ANNEXURE – XIII

## INTERVENTIONAL PROTOCOL

- Patients were selected through non-probability purposive sampling technique. First 50 head and neck cancer patients were assigned for the study.
- The researcher told about the study and form rapport with the patients.
- The investigator introduces self and explains the purpose of the study to the patients.
- Socio-demographic data was obtained from the patients who participate in video assisted educational program.
- Initially assess the knowledge and expressed practices of patients about oral mucositis by using self-structured questionnaire for knowledge and rating scale for expressed practices by interview technique for pre-test. This was served as the baseline data.
- Each interview took approximately 5 - 10 minutes to complete the self-structured questionnaire and rating scale.
- A 4 minutes 15 seconds video assisted educational program (video is self-made and validity of video was obtained) on oral mucositis was delivered in Hindi. It had covered –

➢ Introduction of self and the oral mucositis.

➢ Causes of the oral mucositis.

➢ Assessment and diagnosis of the oral mucositis.

➢ Dietary management in oral mucositis.

- Oral hygiene and brushing.
- Mouthwash in oral mucositis prevention.
- Prohibition of smoking, alcohol and other substances.
- Follows ups.

- Head and neck cancer patient's receiving radiotherapy were assessed after minimum 7 days of intervention using self-structured questionnaire and rating scale by structured interview.

## ANNEXURE – XIV

## CONTENT FOR VIDEO

Hi! My name is Jyoti Rathore. I am a student of Nursing College, AIIMS, Jodhpur. I will tell you about the oral mucositis caused by radiotherapy which is a treatment for cancer.

What is oral mucositis? Oral mucositis is formed in the upper layer of our mouth, that is what we call oral mucositis. These are some side effects caused by radiotherapy. Harmful ionizing radiation damaging oral mucus membrane and oral mucositis occur.

Oral mucositis occurs about 2 weeks after starting radiotherapy. Before oral mucositis, some circles of red colour are formed in the mouth and they experience pain.

We can find the oral mucositis by evaluating the mouth. After oral mucositis, you should also pay attention to your diet. Solid foods should not be eaten. Beverages such as juice, rabri etc. should be eaten. And should eat food that is physically soft. Such as oatmeal, khichdi etc. Foods which are spicy and oily should not be eaten. This may increase the pain in the mouth. Fruit should also be used in food such as papaya, banana etc.

You can also use ice to treat oral mucositis. Pain is relieved by keeping ice in the mouth for some time. The best treatment of mouth ulcers is cleansing of the mouth. To clean the mouth properly, should brush twice daily. Brushing should be for at least 2 minutes and it is also necessary to change the brush after every 3 months. A soft brush should be used for brushing. And toothpaste should be used for brushing. After thoroughly brushing the teeth,

the brush should be well covered and kept in a clean place. By doing this, the risk of infection from the germ is reduced.

You should use mouthwash for mouth cleaning. Mouthwash is a type of solution in which certain medicines are added which prevents infection of germs in the mouth. We can also use soda-bi-carbonate solution for mouthwash. For preparing the soda-bi-carbonate solution add 2 teaspoon of soda-bi-carbonate (baking soda) and 1 teaspoon of salt in 200 ml water. Mouthwash should be done every 4 hours (5 -6 times a day). This reduces the possibility of oral mucositis.

To reduce the pain caused by oral mucositis, you should drink water and other beverages with the help of straw. Smoking, alcohol consumption, tobacco may also be some of the causes of oral mucositis. Therefore, one should not take all these or any other intoxicating substance. The mouth should be evaluated periodically. If there are any problems, a doctor should be contacted immediately. Medications given by the doctor should be taken on time. No medicine should be taken without doctor's prescription.

I hope you have received information about oral mucositis which is a side effect of radiotherapy from this video. And you will also try to prevent oral mucositis. Thank you very much for watching my video.

## ANNEXURE – XV

वीडियो सामग्री

नमस्कार ! मेरा नाम ज्योति राठौड है। मैं AIIMS, जोधपुर के नर्सिंग महाविद्यालय की विद्यार्थी हु। में आपको रेडियोथेरेपी जो की कैंसर का इलाज़ है से होने वाले मुँह के छालो के बारे में बताउंगी।

छाले क्या होते है ? हमारे मुँह की सबसे ऊपरी परत में घाव बन जाते है, उसे ही हम छाले कहते है। यह रेडियोथेरेपी से होने वाले कुछ दुष्प्रभाव है। हानिकारक आयनीकृत विकिरण मुँह की परत को नुकसान पहुँचती है, और छाले हो जाते है।

छाले रेडियोथेरेपी शुरू करने के बाद लगभग 2 सप्ताह बाद होते है। छाले होने से पूर्व मुँह में लाल रंग के कुछ घेरे बन जाते है और उनमे दर्द का अनुभव होता है।

छालो को हम मुँह का मूल्यांकन करके पता लगा सकते है। छाले होने के बाद आपको अपने खान पान में भी ध्यान देना चाहिए। कठोर खाद्यय पदार्थो को नहीं खाना चाहिए। पेय पदार्थो जैसे की जूस, राबड़ी आदि को खाना चाहिए। और ऐसा खाना खाना चाहिए जो शारीरिक रूप से मुलायम हो। जैसे की दलिया, खिचड़ी आदि। ज्यादा मिर्च व ज्यादा तेलीय युक्त पदार्थो को नहीं खाना चाहिए। इससे मुँह में छालो का दर्द बढ़ सकता है। खाने में फलो का उपयोग भी करना चाहिए जैसे की पपीता, केले इत्यादि।

छालो के इलाज़ के लिए आप बर्फ का उपयोग भी कर सकते है। बर्फ को कुछ देर मुँह में रखने पर दर्द में राहत मिलती है। मुँह के छालो का सबसे बेहतर इलाज़ है मुँह की सफाई। मुँह की अच्छी तरह सफाई करने के लिए रोजाना दिन में दो बार ब्रश करना चाहिए। ब्रश कम से कम 2 मिनट तक करना चाहिए और ब्रश को हर 3 महीने बाद बदलना भी आवश्यक है। ब्रश करने के लिए मुलायम ब्रश का प्रयोग करना चाहिए। और ब्रश करने के लिए टूथपेस्ट का प्रयोग

करना चाहिए। दांतो को अच्छी तरह साफ़ करने के बाद ब्रश को अच्छी तरह ढक कर साफ़ जगह रखना चाहिए। ऐसा करने पर रोगाणु से संक्रमण होने की आशंका कम हो जाती है।

मुँह की सफाई के लिए आपको माउथवाश का प्रयोग करना चाहिए। माउथवाश एक तरह का द्रव है जिसमे कुछ तरह की दवाईया मिलायी जाती है जो मुँह में होने वाले रोगाणु के संक्रमण को रोकता है। हम माउथवॉश के लिए सोडा-बाय-कार्बोनेट के घोल का भी उपयोग कर सकते हैं। सोडा- बाय-कार्बोनेट का घोल तैयार करने के लिए 200 मिलीलीटर पानी में 2 चम्मच सोडा- बाय-कार्बोनेट (मीठा सोडा) और 1 चम्मच नमक मिलाएं। माउथवाश हर 4 घंटे में करना चाहिए। और दिन में 5 -6 बार करना चाहिए। इससे छाले होने की आशंका कम हो जाती है।

छालो से होने वाले दर्द को कम करने के लिए आपको पानी व अन्य पेय पदार्थो को स्ट्रॉ या नलकी की सहायता से पीना चाहिए। छाले होने के कुछ कारण धूम्रपान, शराब का सेवन, गुटखा भी हो सकते है। इसलिए इन सबका सेवन या किसी अन्य नशीले पदार्थ का सेवन नहीं करना चाहिए। मुँह का समय समय पर मूल्यांकन करते रहना चाहिए। यदि कोई परेशानी हो, तो तुरंत डॉक्टर से संपर्क करना चाहिए। डॉक्टर द्वारा दी गयी दवाईया समय पर लेनी चाहिए। डॉक्टर की अनुमति के बिना कोई भी दवाईया नहीं लेनी चाहिए।

मैं उम्मीद करती हु की आपको इस वीडियो से रेडियोथेरेपी से होने वाले मुँह के छालो के बारे में जानकारी प्राप्त हुई होगी। और आप मुँह के छालो से बचाव का प्रयास भी करेंगे। मेरे वीडियो को देखने के लिए आपका बहुत बहुत धन्यवाद।

## ANNEXURE - XVI

## MASTER DATA SHEET

### PRE-TEST

| PATIENT | A:1 | A:2 | A:3 | A:4 | A:5 | A:6 | B:1 | B:2 | B:3 | B:4 | B:5 | B:6 | B:7 | B:8 | B:9 | B:10 | B:11 | B:12 | B:13 | B:14 | B:15 | B:16 | B:17 | B:18 | B:19 | B:20 | TOTAL | C:1 | C:2 | C:3 | C:4 | C:5 | C:6 | C:7 | C:8 | C:9 | C:10 | C:11 | C:12 | C:13 | C:14 | C:15 | C:16 | C:17 | C:18 | C:19 | C:20 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 3 | 1 | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 11 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 41 |
| **2** | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 16 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 42 |
| **3** | 3 | 1 | 1 | 4 | 3 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 11 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 42 |
| **4** | 4 | 1 | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 45 |
| **5** | 4 | 1 | 4 | 4 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 13 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 51 |
| **6** | 3 | 2 | 4 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 51 |
| **7** | 2 | 1 | 4 | 4 | 4 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 37 |
| **8** | 3 | 2 | 1 | 2 | 4 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 35 |
| **9** | 2 | 1 | 2 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 10 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 2 | 1 | 3 | 1 | 1 | 3 | 2 | 1 | 3 | 33 |
| **10** | 4 | 1 | 3 | 2 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 37 |
| **11** | 2 | 2 | 2 | 4 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 11 | 3 | 1 | 2 | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 3 | 1 | 3 | 3 | 1 | 3 | 1 | 3 | 41 |
| **12** | 3 | 1 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 14 | 3 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 47 |
| **13** | 4 | 2 | 3 | 4 | 4 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 12 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 45 |
| **14** | 4 | 1 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 51 |
| **15** | 3 | 1 | 3 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 41 |
| **16** | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 52 |
| **17** | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 51 |
| **18** | 2 | 1 | 3 | 3 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 8 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| **19** | 4 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 11 | 3 | 2 | 3 | 2 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 48 |
| **20** | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| **21** | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 11 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 44 |
| **22** | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 38 |
| **23** | 3 | 2 | 3 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 41 |
| **24** | 1 | 1 | 4 | 3 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 2 | 3 | 1 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 54 |
| **25** | 1 | 1 | 3 | 4 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 42 |
| **26** | 3 | 2 | 2 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 8 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 42 |
| **27** | 4 | 1 | 2 | 5 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 13 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 38 |
| **28** | 1 | 1 | 4 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 3 | 1 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **29** | 4 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **30** | 2 | 1 | 3 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **31** | 2 | 2 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 51 |
| **32** | 4 | 1 | 2 | 2 | 4 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 3 | 37 |
| **33** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 38 |
| **34** | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 1 | 3 | 35 |
| **35** | 1 | 2 | 3 | 3 | 4 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 3 | 41 |
| **36** | 2 | 2 | 1 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 37 |
| **37** | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 9 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 39 |
| **38** | 3 | 2 | 2 | 4 | 4 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 11 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| **39** | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 10 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **40** | 1 | 2 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **41** | 2 | 2 | 4 | 4 | 4 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 1 | 3 | 41 |
| **42** | 1 | 2 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| **43** | 1 | 1 | 3 | 3 | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 9 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 1 | 3 | 36 |
| **44** | 3 | 2 | 1 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 36 |
| **45** | 3 | 1 | 2 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 39 |
| **46** | 3 | 2 | 2 | 2 | 1 | 2 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 9 | 3 | 1 | 3 | 2 | 1 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| **47** | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 16 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 43 |
| **48** | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 11 | 3 | 2 | 3 | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 46 |
| **49** | 3 | 1 | 2 | 3 | 4 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 14 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 3 | 38 |
| **50** | 3 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 15 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 3 | 51 |

## ANNEXURE - XVI

## MASTER DATA SHEET

### POST-TEST

| PATIENT | A:1 | A:2 | A:3 | A:4 | A:5 | A:6 | B:1 | B:2 | B:3 | B:4 | B:5 | B:6 | B:7 | B:8 | B:9 | B:10 | B:11 | B:12 | B:13 | B:14 | B:15 | B:16 | B:17 | B:18 | B:19 | B:20 | TOTAL | C:1 | C:2 | C:3 | C:4 | C:5 | C:6 | C:7 | C:8 | C:9 | C:10 | C:11 | C:12 | C:13 | C:14 | C:15 | C:16 | C:17 | C:18 | C:19 | C:20 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 1 | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 11 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 43 |
| 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 43 |
| 3 | 3 | 1 | 1 | 4 | 3 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 11 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 43 |
| 4 | 4 | 1 | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 45 |
| 5 | 4 | 1 | 4 | 4 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 16 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 51 |
| 6 | 3 | 2 | 4 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 16 | 3 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 51 |
| 7 | 2 | 1 | 4 | 4 | 4 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 38 |
| 8 | 3 | 2 | 1 | 2 | 4 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 36 |
| 9 | 2 | 1 | 2 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 10 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 2 | 1 | 3 | 1 | 1 | 3 | 2 | 1 | 3 | 33 |
| 10 | 4 | 1 | 3 | 2 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 12 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 41 |
| 11 | 2 | 2 | 2 | 4 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 12 | 3 | 1 | 2 | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 3 | 1 | 3 | 3 | 1 | 3 | 1 | 3 | 41 |
| 12 | 3 | 1 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 16 | 3 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 47 |
| 13 | 4 | 2 | 3 | 4 | 4 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 13 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 45 |
| 14 | 4 | 1 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 51 |
| 15 | 3 | 1 | 3 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 43 |
| 16 | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 52 |
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| 19 | 4 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 14 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 51 |
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| 22 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 41 |
| 23 | 3 | 2 | 3 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 11 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 41 |
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| 25 | 1 | 1 | 3 | 4 | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 11 | 3 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 45 |
| 26 | 3 | 2 | 2 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 10 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 44 |
| 27 | 4 | 1 | 2 | 5 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 13 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 41 |
| 28 | 1 | 1 | 4 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| 29 | 4 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 43 |
| 30 | 2 | 1 | 3 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| 31 | 2 | 2 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 13 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 52 |
| 32 | 4 | 1 | 2 | 2 | 4 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 10 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 3 | 41 |
| 33 | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 11 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 39 |
| 34 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 1 | 3 | 36 |
| 35 | 1 | 2 | 3 | 3 | 4 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 3 | 41 |
| 36 | 2 | 2 | 1 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 7 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 37 |
| 37 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 11 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 3 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 41 |
| 38 | 3 | 2 | 2 | 4 | 4 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 13 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| 39 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| 40 | 1 | 2 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 11 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 42 |
| 41 | 2 | 2 | 4 | 4 | 4 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 12 | 3 | 1 | 3 | 2 | 2 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 1 | 3 | 42 |
| 42 | 1 | 2 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 11 | 3 | 1 | 3 | 2 | 2 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 43 |
| 43 | 1 | 1 | 3 | 3 | 2 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 9 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 3 | 1 | 3 | 37 |
| 44 | 3 | 2 | 1 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 8 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 37 |
| 45 | 3 | 1 | 2 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 11 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 3 | 41 |
| 46 | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 16 | 3 | 1 | 3 | 2 | 1 | 3 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 51 |
| 47 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 16 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 44 |
| 48 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 12 | 3 | 2 | 3 | 2 | 1 | 3 | 2 | 1 | 1 | 2 | 1 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 46 |
| 49 | 3 | 1 | 2 | 3 | 4 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 14 | 3 | 1 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 3 | 41 |
| 50 | 3 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 15 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 52 |

**ANNEXURE – XVII**

**VIDEO DVD ON ORAL MUCOSITIS PREVENTION**