



# EFFECT OF COMPUTER ASSISTED INSTRUCTION ON KNOWLEDGE AND ATTITUDE REGARDING PALLIATIVE CARE AMONG FINAL YEAR B.Sc. NURSING STUDENTS.

1Mr. Snel Gilbert Alwaris, 2Mrs. Susan Jacob

1M.Sc. Nursing, 2Professor

1MGM New Bombay College of Nursing, Kamothe,

2MGM New Bombay College of Nursing, Kamothe

## Abstract

**Introduction:** Palliative care is patient centered approach to improve quality of life for both patients facing life threatening illnesses and also for their families.

**Objectives:** To assess the effect of computer assisted instruction on Knowledge & attitude regarding palliative care among final year B.Sc. nursing students.

**Methodology:** Quantitative approach with quasi experimental design was used & samples were final year B.Sc. nursing students selected through non-probability convenient sampling. Data has collected through structured questionnaire to assess knowledge, Likert scale to assess attitude. Pilot study followed by actual data collection was done & analyzed using descriptive & inferential statistics.

**Result:** Statistical analysis shows that the pre-test mean knowledge score is 8.21 whereas the mean post-test score is 16.39. Wilcoxon signed rank test gives p value as 0.000 that has high significant as  $p < 0.001$ . The mean difference in pre-test & post-test knowledge mean score was

8.18 in the experimental group whereas in control group it was 0.34. Wilcoxon signed rank test indicate that

the difference in the mean score of experimental group was statistically significant than that of control group with the p value 0.00, i.e.  $p < 0.001$  in the experimental group. Significant difference in the attitude mean score of both the groups i.e., 109.96 in experimental group & 64.39 in control group. A greater difference in mean score was observed in the experimental group. Wilcoxon sign rank test indicate that difference in mean score of experimental group was statistically significant than that of control group with p value 0.00 that is  $p < 0.001$  in experimental group. Hence, computer assisted instruction was more effective in improving knowledge & attitude regarding palliative care among Nursing students.

**Discussion:** Finding revealed that computer assisted instruction is effective in improving knowledge & attitude regarding care of patients with tracheostomy.

**Key words:** Computer assisted instruction, Knowledge, Attitude, end of life care, Final year B. Sc Nursing students.

## Chapter 1: Introduction

“We cannot change the outcomes, but we can affect the journey.”

- Ann Richardson

### 1.1 Background of the study

Palliative care is a branch of medicine that provide patient-centred care for individuals and their families suffering from serious illness at all stages of the disease course. It addresses the major priorities of relieving suffering, establishing goals of care, and managing physical symptoms while integrating the psychosocial, cultural, spiritual, and existential complexities of coping with chronic illness.<sup>2</sup>

Palliative care is an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual. – WHO

Main aim of palliative care is to enhance the quality of life for the terminally ill individuals and help their families. Palliative care can be provided at any age of life. There are various team members involved in providing palliative care, among whom the nurses are considered to be the most crucial member in delivering the care.

Nursing students, who will be the future novice nurses, should be well educated to deliver quality palliative care. In general, lack of knowledge is a vital obstacle in providing palliative care. With the growing aging population, continual increase of the number of the old, and increase span of cancer survival rate, Palliative care is being considered a global public health issue. As a core force for the sustainable development of the nursing field, undergraduate nursing students' knowledge and attitudes toward Palliative care will directly affect the quality of care for dying patients in the future. Palliative care is not limited to cancer or even to the terminal stages of illness; it can last for years, and can be applied to any life-threatening disease, though it is most often associated with cancer. Palliative care is not an alternative to other care, but is a complementary and essential component of total patient care.<sup>5</sup>

Education brings desirable changes in the knowledge, skill & development on attitude. Learning is the process of growth & development where the learner acquires a body of knowledge, develops the ability to use knowledge in the pursuit of ideas. Learning brings modification of behavior.

In sum, it can be included that Nursing students' palliative care knowledge & attitudes regarding palliative care are indicators for the quality of palliative care implementation.

A cross sectional survey design was used to investigate the knowledge & attitude towards palliative care on 61 nursing students, using questionnaire and result of the study suggested that, students had poor knowledge and negative attitude towards palliative care.<sup>4</sup>

A short literature review was up taken to assess nursing students' knowledge on palliative care, the articles were searched from various databases from six years duration. The result of the investigation delineated that; nursing students had poor knowledge regarding palliative care.<sup>1</sup>

Learning is associated with the act of deed new, or modifying & reinforcing existing data, behaviors, skills, values, or preferences & could involve synthesizing different kinds of knowledge. Human learning could occur as a part of education, personal development, schooling, or coaching. Learning is goal-oriented & may be aided by motivation. Learning is a stimulating activity engaged physically, mentally, or emotionally.

Computer Assisted Instruction has been claimed to improve knowledge retention and achievement scores, enhance clinical judgement skills and reduce required instruction time; performing as well when compared to other more traditional education techniques. The advantages of the utilization of Computer Assisted Instruction in nursing education can be made clear by consideration of adult education theory and curriculum design, as well as the particular learning needs of nurses themselves.

Research and development into a theoretical framework for Computer Assisted Instruction design and implementation has allowed the identification of beneficial aspects of Computer Assisted Instruction resources.<sup>3</sup>

## 1.2 Need for the study

Currently less number of clinical studies had been published in terms of knowledge and attitude regarding palliative care among undergraduate nursing students, thus certain clinical studies were published in authorized publications. A study conducted to investigate the predictors of palliative care knowledge in nursing students suggest that, participants had poor knowledge on palliative care where mean score of participants indicated that it was 5.23 and there is significant need for training of nursing students in palliative care.<sup>6</sup>

A study conducted in Athens, Greece suggested that, knowledge about pain / symptom management and psychosocial / spiritual care was insufficient. Response rate was 87.6 % , mean total of Palliative Care Quiz for Nursing depicted low level of knowledge among students and mean total of Frommelt Attitude Towards care of Dying Scale indicated supportive attitude where 60% of respondents were ready to take care of dying person and their family members. Researcher noted lower optimistic attitude in relation with students' comfort with care of dying person and impending death.

Knowledge about palliative care was hugely weak, yet it was significant, and it predicted much liberal attitude towards care of dying. This study implies that a structured curriculum in palliative care can be made part of Under Graduate Nursing education. Special attention can be given to areas like, misconception, professional communication, biases toward death and dying and comfort in caring to prepare student nurses to psychologically address with sympathetic and challenging process of death and dying.<sup>7</sup>

A study conducted to measure knowledge, attitude towards palliative care using self-developed online educational model. Researcher used Randomized controlled educational approach in this study by using Moodle Platform vs traditional education. The study was conducted among 169 physicians, the Result of this study reveals that, there was significant increase in knowledge of 14% - 20% and a significant gain in perception of confidence in symptoms management and communication.<sup>8</sup>

Researcher conducted a study on undergraduate nursing students to find out the knowledge and attitude

towards palliative care, and used descriptive design and cross-sectional survey was conducted. The result of the study depicts that, only some students expressed desire for working in palliative care in future. Findings shows that knowledge and school, grade, gender, birthplace, and religious belief have significant impact. In this study, knowledge about palliative care is minimal and majority holding negative attitude and this study recommends that, development of an effective end of life care program for nursing students is critical.<sup>9</sup>

A research study was conducted towards palliative care knowledge and attitude among nurses' approach in the study design was descriptive, cross sectional explorative study, data collection was done in ICU, ER, medical wards, and surgical wards. Result of the study depicted that, nurses had poor knowledge, but their attitude towards Palliative Care was moderate, and suggested that undergraduate nursing students need to be provided educational training for palliative care.<sup>5</sup>

As chronic illness prevalence's have been reported highly in India and all over the globe, necessity of palliative care becomes integral part from nurses' perspective and aspect of care at hospital and home care. The nurses, physicians & respiratory therapists must possess good knowledge & understand each patient's specific needs and work holistically together to set realistic goals.

A pre and post palliative course study was conducted to examine nursing students' attitude toward care of dying patients before and after a course in palliative care, qualitative open-ended questions were asked to participants. The results of the study proved that, significant change towards attitude toward care of patients who are dying and their relatives. Qualitative analysis showed that students had gained more knowledge, accurate understanding, and deep insight through educational course. This study suggests that educational course in palliative care may help to modify nursing students' attitude towards care of patients who are terminally ill and their families in optimistic direction.<sup>10</sup>

The goal of this study is to assess the effectiveness of computer assisted instruction on palliative care among undergraduate nursing students. This type of research has been carried out for the first time, so researcher feels the need of conducting this research with the support of scientifically published articles on undergraduate nursing students to train students and prepare for future need in palliative care units, further hospital administration can consider training nurses with the help of computer assisted instruction module with flexible scheduled as per duties.

According to work experience of researcher, it is observed that many nurses & novice nurses do not have

clarity and has minimum knowledge and their attitude towards palliative care is negative, also as a researchers felt the need to take up this study as, computer assisted instruction is of the effective mode to deliberate knowledge and enhance positive attitude among undergraduate nursing students regarding palliative care.

Therefore, as per experience of researcher, it is felt that it will have propensity for enhancing cognitive & intellectual content of student nurses related to Palliative care throughout student's period. This motivated the researcher to take up the study.

### 1.3 Statement of the Problem

Effect of Computer Assisted Instruction on Knowledge and attitude Regarding Palliative Care Among Undergraduate Nursing Students.

### 1.4 Objectives of the study

1. To assess the knowledge regarding palliative care among undergraduate nursing students before and after computer assisted instruction in the experimental and control group.
2. To assess the attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in the experimental and control group.
3. To compare the knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in the experimental and control group.

### 1.5 Operational Definition

### 1.5.1 Effect:

According to oxford dictionary “Effect” is a change which is a result or consequences of an action”<sup>13</sup>

In this study effect refers to the change in knowledge and attitude regarding palliative care as elicited by response through structured questionnaire.

### 1.5.2 Computer assisted Instruction

Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place.<sup>14</sup>

In this study, Computer assisted instructions refers to, informational instructions, drills and practice programmes, tutorials, problem solving types, practical work-oriented instructions to deliberate on educational content. This includes Definition, Indication, Principles, Difference between hospice care and palliative care, Symptom management in palliative care, Ethical and legal issues at End of life, Loss, grief and bereavement, Therapeutic communication and Psychological, Social and Spiritual needs of End-of-life patients and their families.

### 1.5.3 Knowledge

According to oxford dictionary “knowledge” is facts, information, skills acquired through experiences or education : the theoretical or practical aware of a subject.<sup>13</sup>

In this study knowledge refers to understanding about various concepts of palliative care assessed by using structured questionnaire.

### 1.5.4 Attitude

According to oxford dictionary attitude is defined as settled opinion or way of thinking.<sup>1</sup>

In this study attitude refers to undergraduate nursing students opinion and belief regarding palliative care as elicited by using a structured 5 points Likert Scale.

### 1.5.5 Undergraduate Nursing Students

Undergraduate

According to oxford dictionary Undergraduate is a university or college student who is studying for their first degree.<sup>1</sup>

## Nursing

According to International council of Nurse, Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles.<sup>15</sup>

### Student

According to oxford dictionary, a person who is studying at a university or college.<sup>1</sup>

In this study undergraduate nursing student refers to, student from final year BSc nursing program studying in the selected college, Navi Mumbai.

### 1.6 Assumption

1. Computer assisted instruction may enhance the knowledge on palliative care among final year nursing students.
2. Knowledge may influence the practice & approach towards palliative care nursing.

### 1.7 Hypothesis

H0 : There is no difference in the knowledge regarding Palliative care among undergraduate nursing students before and after computer assisted instruction.

H1 : There is a difference in the knowledge regarding Palliative care among undergraduate nursing students before and after computer assisted instruction.

H02 : There is no difference in the attitude regarding Palliative care among nurses before and after computer assisted instruction.

H2 : There is a difference in the attitude regarding Palliative care among nurses before and after computer assisted instruction.

### 1.8 Delimitation

- The study area is limited to selected Nursing College in Navi Mumbai.
- The study conducted only to Final year B.Sc. Nursing Students.

## 1.9 Conceptual framework

“Conceptualization refers to the process of forming goals, structures and design. It is the process of moving from an abstract idea to a concrete idea.”<sup>16</sup>

This study assesses the effect of computer assisted instruction on knowledge and attitude regarding palliative care among undergraduate nursing students.

The conceptual framework for this study was based on J.W. KENNY'S open system model. According to Kenny, all the living system are open and they are in continuous exchange of matters, energy and information.

The system receives input and gives back output in the form of information or knowledge System model consist of 3 phases input, throughput and output. These 3 phases are also known as classical element of the system.

### INPUT: -

It is the first phase in open system Based on Kenny input can be a matter of information.

In this study the input is assessing the knowledge and attitude regarding palliative care among undergraduate nursing students with the help of self-structured questionnaire and 5 point Likert Scale.

### THROUGH PUT: -

It is the matter, energy and transformation that enter the system from then environment. For a system to work well input should contribute to achieve the purpose of the system.

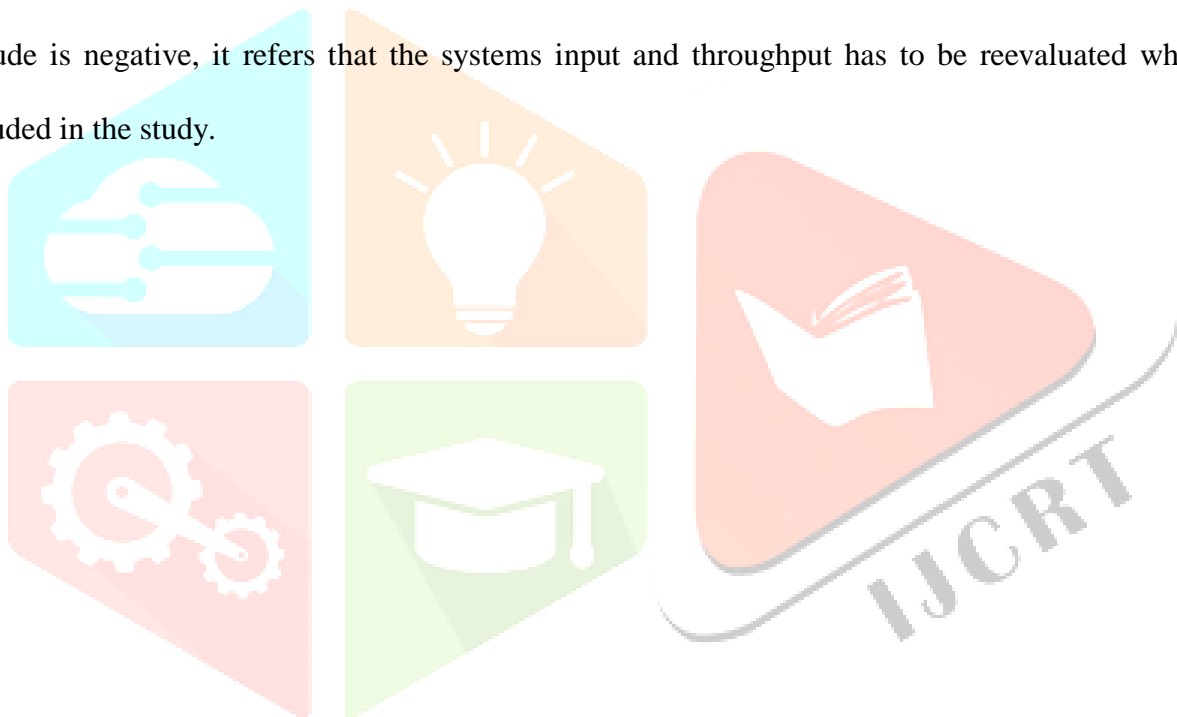
In this study, the throughput refers to computer assisted instruction on knowledge and attitude on various concepts of palliative care like, definition, principles, model, indications, symptoms, pain assessment, role of nurse in palliative care and ethical legal issues and therapeutic communication in palliative care.

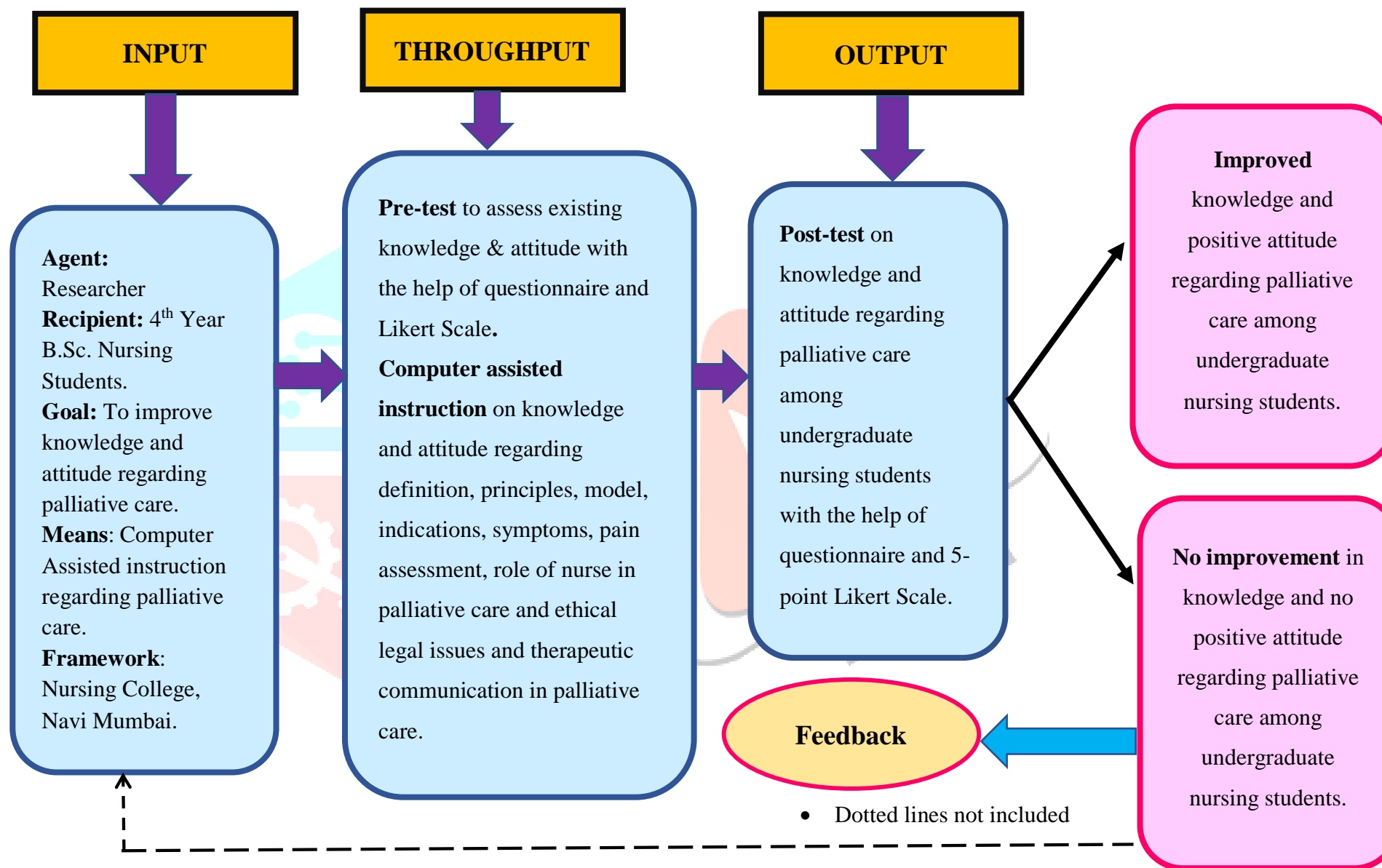
**OUTPUT: -**

Is the post-test and it is the outcome of the study. Here, the researcher reassessed the knowledge and attitude regarding palliative care among undergraduate nursing students after a week of implementation of computer assisted instruction. Outcome may be positive or negative.

**FEEDBACK: -**

The feedback can be measured by the output whether the knowledge is adequate or inadequate and attitude is positive or negative. If the undergraduate nursing students gain adequate knowledge and positive attitude after intervention, then the developed computer assisted instruction is considered useful to update the knowledge and inn attitude building of undergraduate nursing students. If the knowledge is inadequate and attitude is negative, it refers that the systems input and throughput has to be reevaluated which is not included in the study.





**Figure 1: Modified Conceptual Framework Based On Kenny's Open System Theory**

---

**Summary:**

This chapter dealt with the statement of the problem, objectives of the study, operational definition, Assumptions, Hypothesis, Delimitation & conceptual framework used for the study & the next chapter will deal with review of literature.



## Chapter 2: Review of Literature

Literature reviews can inspire new research ideas, and help to lay the foundation for studies. A literature review is a crucial early task for most quantitative researchers. For example, a literature review in a quantitative study can help to shape research questions, contribute to the argument about the need for a new study, suggest appropriate methods, and point to a conceptual or theoretical framework. By doing a thorough review, researchers can determine how best to contribute to the existing evidence base for example, whether there are gaps in a body of research, or whether a replication with a new population is the right next step. A literature review also helps researchers to interpret their findings.<sup>17</sup>

**The review of literature for the present study is organized under the following headings: -**

2.1 Literature related to knowledge regarding palliative care.

2.2 Literature related to attitude regarding palliative care.

2.3 Literature related to effectiveness of computer assisted instruction in education.

### **2.1 Literature related to knowledge regarding palliative care.**

A descriptive cross-sectional study conducted on predictors of palliative care knowledge among nursing students, on 409 samples were selected for the study, Result indicated that participants had poor knowledge on palliative care in terms of principles and palliative care, philosophy, management of pain and other symptoms as well as psychological and spiritual care.<sup>18</sup>

A descriptive cohort, cross sectional survey was conducted on undergraduate nursing students' knowledge about palliative care and attitude towards end of life care, on 529 Nursing students, students were administered with self-structured palliative care quiz and questionnaire for attitude was used by researcher. Result of the study shows that, knowledge about pain, symptoms management, psychological and spiritual care was insufficient. Researcher also noticed lower optimistic attitude in

relation with students' comfort with care of dying person and impending death, knowledge of the participant was very weak.<sup>19</sup>

A study conducted to assess undergraduate nursing students' perception of end-of-life care placement in the nursing curriculum, on 37 Nursing students. Result of the study shown 92% of students were aware of the End-of-Life.<sup>20</sup>

A study was conducted to assess nurses' knowledge about palliative care, on 140 nurses as participants. Result was, majority of nurses had poor knowledge on Palliative care & nurses knowledge can be enhanced by establishing specific palliative care units to focus on end of life care, this establishment requires collaboration of end of life nursing education curriculum into undergraduate nursing studies.<sup>21</sup>

A cross sectional survey was conducted on knowledge of palliative care and attitude towards nursing the dying patients, on 61 nurses, the result of the study shown that, there was significant correlation between level of knowledge and attitude towards care of patients, participants level of knowledge increased and positive attitude was developed.<sup>22</sup>

A quantitative cross-sectional survey was conducted to study nurses knowledge regarding palliative care, on 363, it was found that knowledge about palliative care was identified to be poor and at same point nurses had higher knowledge about psychiatric problems and philosophy than other views.<sup>23</sup>

A large survey of frontline workers was carried out on knowledge and practices regarding palliative care, on 1200 samples. Results of this study implies that, as per role of nurses, their knowledge varied by role. This study documented that, there is need of training of nursing personnel in palliative care.<sup>24</sup>

An online survey was carried out on knowledge of palliative care, quantitative research method was adopted for this descriptive study; participants included in this study were 220 final year nursing students, the result of this study suggested that, knowledge was affected by their academics and it proposed need to involve palliative care education to improve students knowledge and practices.<sup>25</sup>

A study was conducted by using pretest post test design to assess the knowledge, attitude and

behavior among Registered nurses working oncology department and educational intervention was implemented to enhance knowledge after pretest, result of this study depicts that, there was average knowledge regarding palliative care.<sup>26</sup>

A cross sectional survey study was conducted in 322 high quality palliative care nursing homes in six European countries to assess the knowledge on palliative care, total of 3392 nursing staffs were included as participants, result of this study depicts that, knowledge among nurses was minimal.<sup>27</sup>

A single center descriptive, questionnaire-based study was undertaken on 250 fifth year medical students to assess the knowledge on palliative care, the results of the study shows that, students had insufficient knowledge.<sup>28</sup>

## **2.2 Literature related to attitude regarding palliative care.**

A descriptive pre and post palliative course study was conducted on nursing students to assess nursing students attitude towards care of dying, the study proved that, significant change towards care of patients who are dying and their relatives also it shown that, students gained more knowledge, accurate understanding and deep insight through educational course, this study suggests that educational course in palliative care may help to modify nursing students attitude and knowledge towards patients who are terminally ill and their families in optimistic direction.<sup>29</sup>

A descriptive cohort, cross sectional survey was conducted on undergraduate nursing students' knowledge about palliative care and attitude towards end of life care, on 529 students, with self-structured palliative care quiz and questionnaire for attitude was used by researcher. Result of the study shows that, knowledge about pain, symptoms management, psychological and spiritual care was insufficient. Researcher also noticed lower optimistic attitude in relation with students' comfort with care of dying person and impending death, knowledge of the participant was very weak.<sup>30</sup>

A cross sectional study was carried out to assess the knowledge and attitude regarding palliative care among nurses at institutional level. Self-structured questionnaire was used to collect the data, outcome of the study regarding attitude was participants had good attitude.<sup>31</sup>

A cross sectional study was undertaken in view to assess the knowledge and attitude regarding palliative care among health professionals, on 161 samples. The result of this study suggested that, there is a significant gap between knowledge and desirable attitude towards palliative care.<sup>32</sup>

A multicenter cross-sectional study was conducted to assess nurses' attitude towards end-of-life care and knowledge about palliative care in Public hospital, on 422 nurses by using self-structured questionnaire. Majority of nurses seemed to be having less favored attitude towards end-of-life care and inadequate knowledge about palliative care.<sup>33</sup>

A cross sectional institutional based quantitative study was conducted to assess knowledge and attitude towards palliative care and associated factors among 355 nurses and result of the study depicted that, nurses had poor knowledge and attitude as positive to some extent.<sup>34</sup>

A study was conducted on university students regarding attitude towards palliative care, in which 322 nurses participated for the survey on palliative care and end-of-life care, and the significant finding was that majority of the students had negative attitude towards palliative care and students didn't believe in end-of-life care.<sup>35</sup>

A qualitative semi-structured interview was carried out on palliative care provides attitude towards existential distress and treatment with therapies by snowball sampling on 19 participants including palliative care physician, advanced practice nurses, psychologists and social workers in palliative care settings. Result of the study depicted that, there's existential distress as a common source of suffering, it suggested that educational outreach should address stigmatized area of palliative care.<sup>36</sup>

A qualitative study was conducted on core attitude of professionals in palliative care with 10 face to face in depth interviews with expert in palliative care. Result of this study implies that, in the palliative care settings, core attitude consists of maintain relationship, genuineness, and great insight about palliative care.<sup>37</sup>

### **2.3 Literature related to effectiveness of computer assisted instruction on Palliative care among**

## Nursing students

In recent times, due to pandemic situation and where continuing education physically or via offline mode was big task, we all had to adopt newer ways to get connected and ensuring the effectiveness of new modalities. In this tech savvy, Computer Assisted Instruction mode is one of the effective method of teaching-learning.

In this study researcher presumed that, Computer Assisted Instruction can be good and effective way to teach palliative care to undergraduate nursing students to increase their knowledge and enhance positive attitude to serve the patients suffering in better way and for better outcomes.

A quasi-experimental study was undertaken on 23 undergraduate nursing students regarding student's self-efficacy about patient care in clinical settings, and computerized simulation about patient care was taught and result of the study shown that; students' knowledge was increased in post-test as compared to pre-test before traditional teaching.<sup>38</sup>

A quasi-experimental study was carried out to compare the Computer Assisted Instruction vs Demonstration method on teaching vital signs measurement in nursing students on 30 undergraduate nursing students, session was conducted for 2 hours and pre-test & post-test was done, result of the study suggested that, computer assisted instruction as an independent educational method, can upgrade learning cognitive aspects in undergraduate nursing students. Thus, Computer Assisted Instruction can be adopted for betterment of nursing education programs.<sup>39</sup>

A study was conducted to compare effectiveness of three instructional interventional strategies like 1. Computer assisted instruction, 2. Traditional class room teaching and 3. Combination of Computer Assisted Instruction and traditional classroom teaching for training nursing students in congenital heart disease on nursing students, result of the study depicted that computer assisted instruction is effective as compared to traditional teaching, considerable enhancement in students' performance was noted.<sup>40</sup>

A randomized control trial was directed to compare the effectiveness of computer assisted instruction and videotape instruction for teaching 88 nurses to assess neurological function of stroke patient, result of the study suggested that, nurses with minimum experience in neurological nursing enhanced better

assessment skills with computer assisted instruction, thus fostering the implementation of computer assisted instruction in education for nurse.<sup>41</sup>

A randomized control trial study was conducted on the effect of computer-assisted learning versus conventional teaching methods on the acquisition and retention of knowledge and skills in pre-qualification nursing students, on 242 first year nursing students. Result of the study depicted that, computer assisted learning module was an effective strategy for teaching both theory and practice to nursing students and in this study it was effective.<sup>42</sup>

Randomized controlled trial was conducted to assess the effectiveness of computer assisted instruction vs tutor delivered teaching on knowledge of 92 undergraduate nursing students; result of the study shows that computer assisted instruction was turn out to be effective mode and enhanced knowledge of students in all aspects.<sup>43</sup>

A study was conducted on 123 nursing students to compare the effectiveness of Computer Assisted Instruction and small group review in clinical teaching to connect nursing students, with the help of supplemental instruction in clinical teaching by computer assisted instruction and small group review, the outcome of the study suggested that computer assisted instruction as effective compare to small group review among nursing students.<sup>44</sup>

A randomized controlled educational trial was conducted to assess the effectiveness of online computer assisted interventional model on palliative care training on knowledge, attitude and satisfaction of primary care physicians, 169 physicians were included in this study, 85 were included in intervention group and 84 in control group. Result of the study depicted that there was significant increase in knowledge. Online computer assisted interventional model was useful tool for teaching palliative care.<sup>45</sup>

## Summary:

This chapter dealt with the review of literature related to incidence of terminally ill patients and whose

who require palliative care, knowledge and attitude regarding care terminally ill patients and end of life care / care of dying. Literature related to effects of computer assisted instruction among undergraduate nursing students & next chapter ill deal with the methodology used in the study.



### Chapter 3: Methodology

This chapter deals with methodology used in the present study which includes research approach,

research design, variables under the study, population, sample, sampling technique, diagrammatic representation of the design, setting of the study. It also describes the tool, its content validity, reliability, pilot study, plan for data collection, data gathering process & plan for data analysis.

### 3.1 Research approach & Design:

A research design is a structure or escort used for the planning, implementation & analysis of a study. Research design provides an outline of how the research will be carried out & the methods that will be used. It is a mode for answering research questions or hypotheses that may arise. The research design is the big picture of specifying the methods & procedures for collecting & analysing the needed information in a research study.<sup>45</sup>

Research approach and design are two terms that are frequently used; however, research design is a broader plan to conduct a study, research approach is an important element of research design, which governs it. Research design is systematic plan of what is to be done, how it will be done and how the data will be analysed. Research design primarily provide a roadmap of how the study will be carried out and the methods will be adopted.<sup>46</sup>

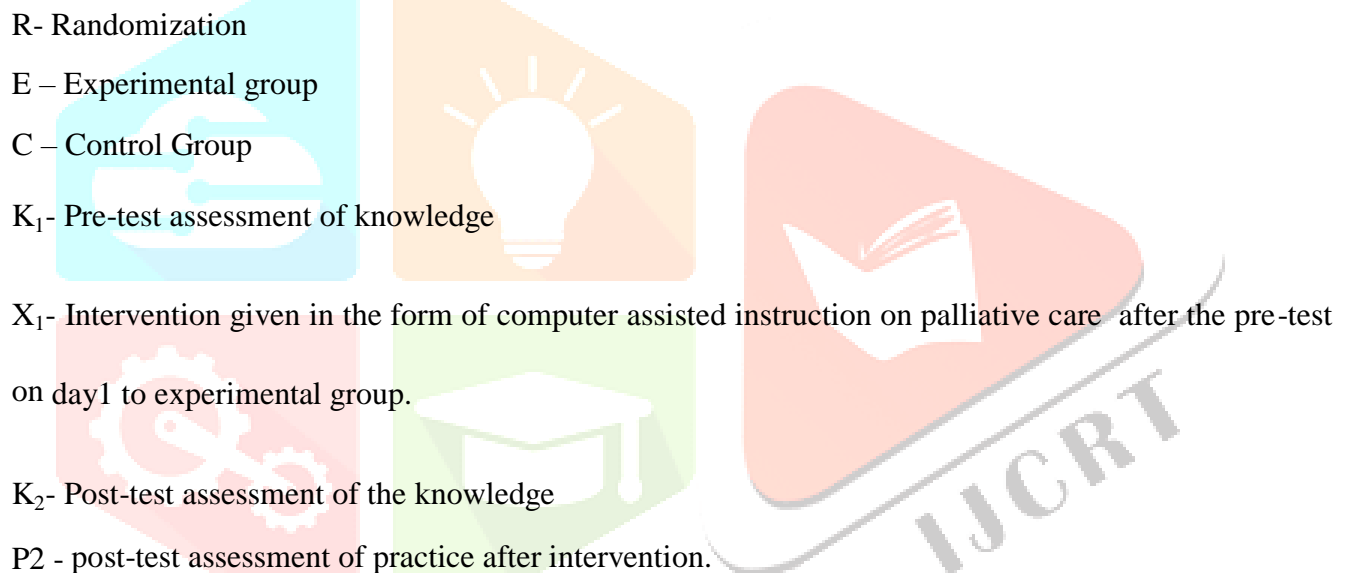
It includes description of research approaches, dependent and independent variables, sampling design and a planned format for data collection, analysis and presentation of findings. It is a methodology for answering research question or hypotheses that may arise. The control provided by the design increase the probability that the study result will accurately reflect the reality.<sup>46</sup>

The selection of the research design depends upon the purpose of the study & the conditions under which the study is conducted. For this present study, a descriptive & evaluative approach was chosen by investigator to find out the effect of computer assisted instruction on knowledge and attitude regarding palliative care.

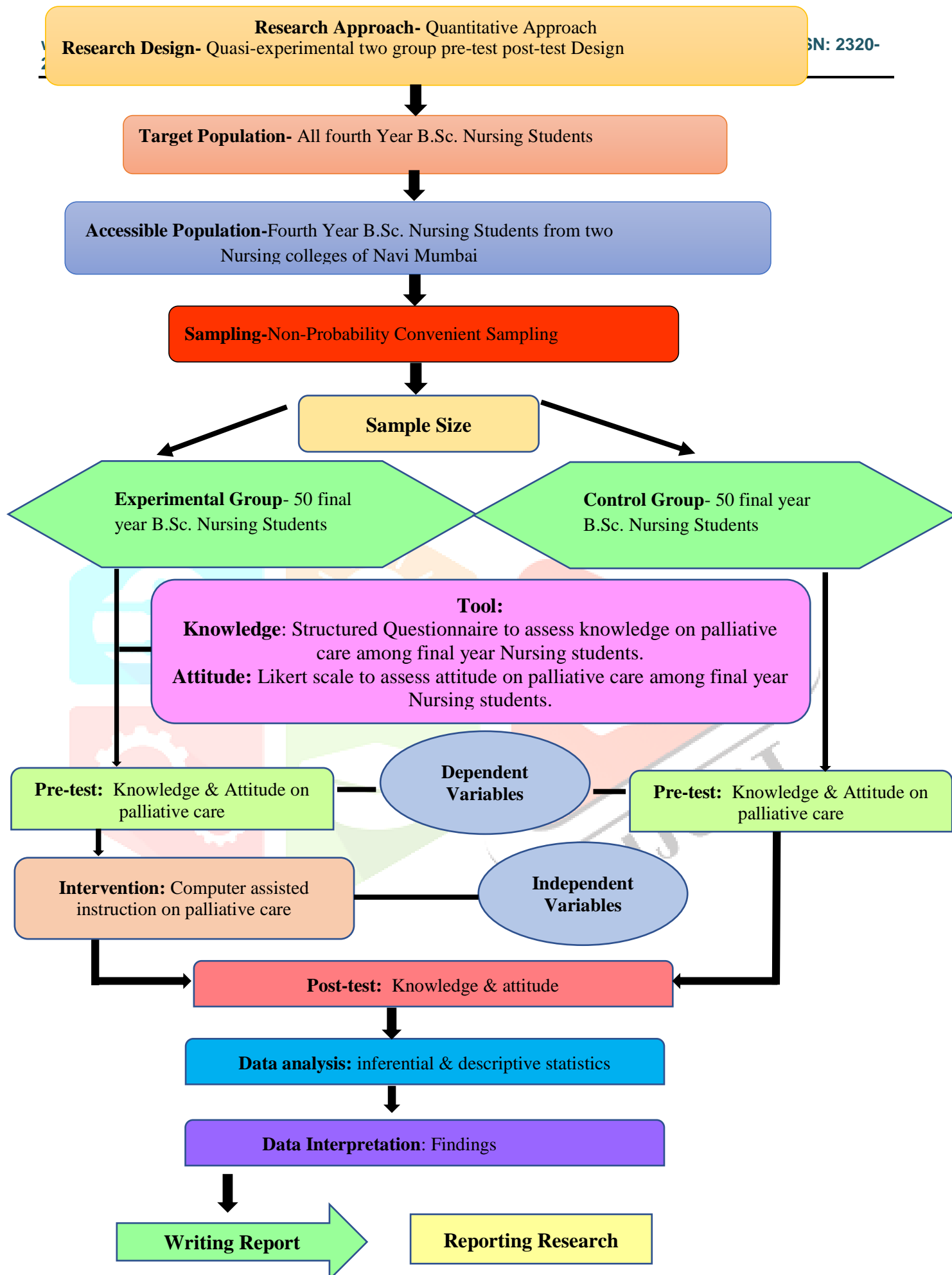
The study uses a quasi- experimental pre-test post-test design for knowledge & a quasi-experimental pre-test post-test design for attitude. The researcher evaluates the effect of computer assisted instruction on knowledge and practice regarding palliative care.

This study uses a quasi-experimental pre-test post-test design for knowledge & quasi-experimental pre-

### Schematic representation of the research study & design



IJCRT21X0032	International Journal of Creative Research Thoughts (IJCRT) <a href="http://www.ijcrt.org">www.ijcrt.org</a>	c304
--------------	--	------



### 3.2 Variables under study

Variables are anything that can change or affect the results of a study. Variables are of types; dependent variable & independent variable.

**Independent variable:** It is one that is applied to the experimental situation to measure its effects.<sup>46</sup>

In this study, independent variable is Computer Assisted Instruction on Palliative Care.

**Dependent variable:** It is the outcome of interest; it is expected that an independent variable will have an effect on dependent variable.<sup>46</sup>

In this study, dependent variables are knowledge and attitude regarding palliative care.

### 3.3 Setting of the study

**Setting:** It refers to the place where the study is conducted.<sup>45</sup>

Study was conducted at two Nursing colleges of Navi Mumbai. These institutions were selected for the study on the basis of ease in availability of the sample, researcher's accessibility & approachability with the institutions.

### 3.4 Population, sample & sampling technique

#### 3.4.1 Population

**Population:** It is a total category of person or objects that meets the criteria for study established by the researcher.<sup>48</sup>

In this study, population refers to Final year BSc nursing students.

**Target population:** It refers to the population that the researcher wishes to study the population about which he/she wishes to make a generalization.<sup>48</sup>

In this study, target population refers to Final year BSc nursing students from two nursing college of Navi Mumbai who were not previously taught on palliative care in classroom.

**Accessible Population:** It refers to the aggregate of cases which conforms to the designated criteria & which is accessible to the researcher as a pool of subjects for the study.<sup>48</sup>

In this study, accessible population refers to final year B.Sc. nursing students from two Nursing colleges of Navi Mumbai who were not previously taught about the topic about palliative care.

### 3.4.2 Sample

**Sample:** Sample is defined as the subset of a population selected to participate in a research study.<sup>46</sup>

In this study, sample comprised of all the final year B.Sc. nursing students who fulfill the inclusion criteria.

### 3.4.3 Sampling Criteria:

**Inclusion Criteria:** It is the eligibility criteria which specify the exact population characteristics by which it can be decided whether they could or could not be classified as a member of the population.<sup>45</sup>

In this study the inclusion criteria are the following:

Final year BSc Nursing students who are:

1. Present during the study
2. Willing to participate in the study

### 3.4.4. Sampling size & sampling Technique.

**Sample Size:** It is the total number of people who participate in the study.<sup>47</sup>

A sample size was selected for the study in the experimental group & in the control group.

## Cochran's Formula

$$n_0 = \frac{Z^2 p(1-p)}{e^2}$$

$n_0$  = Sample size

Z= Z statistics for level of confidence, 1.96

P = Expected prevalence- 0.036

$$n_0 = \frac{1.96^2 \times 0.036 \times 0.964}{0.0025} = 53$$

$n = 53$

**Sampling Technique:** It is the process of selecting a portion of the population to represent the whole population.<sup>45</sup>

In this study non-probability convenient sampling technique was used to select the sample based on the inclusion criteria.

### 3.5.Data collection techniques:

**Data collection technique:** It is the technique adopted by the researcher to collect data in a systematic manner. Following techniques were used for data collection.

- Many studies were reviewed & frequent interactions with the expert (Appendix) were done to develop the tool.
- Initially, with the help of repeated review of literature, researcher prepared a content regarding palliative care with blue print to construct the tool to assess knowledge and Attitude on palliative care. (Appendix)
- The objectives of the lesson plan helped the researcher in preparing the blue print (Appendix)

for the content which was constructed to assess the knowledge and attitude in relation to palliative care.

- Structured questionnaire (Appendix) was used to assess the knowledge regarding palliative care.
- Five points Likert scale (Appendix) was used to assess the attitude regarding palliative care.
- The tool and lesson plan were prepared in English since the study dealt with final year BSc nursing students.
- Pre-test was conducted on day 1 and after 7 days researcher has conducted post-test on knowledge & attitude regarding palliative care after intervention in experimental group.

### **3.6.Data collection Instrument/ tool**

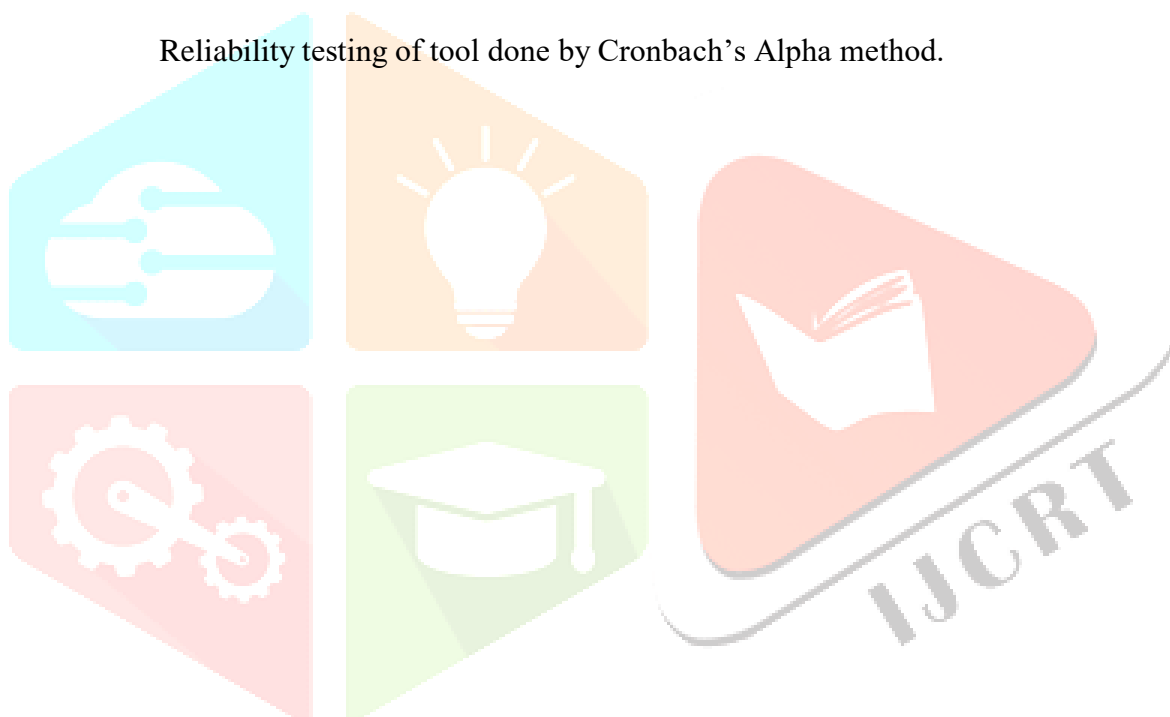
The researcher tool is also called as the research instrument which is a device used to collect the data. This instrument facilitates the observation & measurement of variables of interest. The type of data collection instrument used in the study is determined by the data collection technique selected. The following instruments/tool prepared for the study.

- Structure questionnaire (Appendix) to assess the knowledge regarding palliative care,
- 5 point Likert Scale (Appendix) to assess the attitude regarding palliative care.

#### **3.6.1. Development of instruments**

The tools were prepared on the basis of the objectives of the study. The following steps were adopted in the development of instruments.

- Review of literature provided adequate content for the tool preparation.
- Expert opinion, guide suggestion, personal experience & discussion with the peer group.
- Development of a blue print. (Appendix)
- Structured questionnaire to assess the knowledge regarding palliative care.
- Likert scale (Appendix) to assess the attitude regarding palliative care.
- Tool was sent to 15 experts for content validity of tool & suggestions were taken & necessary corrections were made.
- Pre testing the instruments.
- Reliability testing of tool done by Cronbach's Alpha method.



### 3.6.2. Description of the instrument

The tool was prepared to assess the effect of computer assisted instruction on knowledge & attitude regarding palliative care among final year B.Sc. nursing students.

The tool considers as the following sections:

### **Tool I: Self-structured Questionnaires to assess the knowledge regarding palliative care.**

The tool was divided into two sections:

**Section A** - It included 4 items to assess the socio demographic data as age, gender, & basic information about palliative care.

**Section B** - it consists of 20 items in which all the items were multiple choice questions, which had 4 alternative responses with only one option as correct response.

### **Tool II: To assess attitude regarding palliative care.**

Five-point Likert scale was used to assess attitude. The options included (1) Agree, (2) Strongly agree, (3) Neutral, (4) Disagree, (5) Strongly disagree. There was total 28 items in tool.

#### **3.6.1. Scoring & interpretation of instruments:**

**Tool I:** This part consists of self-structured Questionnaires to assess the knowledge regarding palliative care.

**Section A** - It included 4 items to assess the socio demographic data as age, gender, & basic information about palliative care.

**Section B** - it consists of 20 items in which all the items were multiple choice questions, which had 4 alternative responses with only one option as correct response, each item has 1 mark for the correct response and 0 for wrong response & score has been converted into percentage.

As per UGC criteria:

The scores were categorized as:

**Good:** 15-20, The students who had scored between this range will fall in good category.

**Average:** 8-14, The students who had scored between this range will fall in average category.

**Poor:** 0-7, the students who had scored between this range will fall in poor category.

Category	Marks	%
Good	15-20	71-100%
Average	08-14	36-70%
Poor	0-7	0-35%

**Tool II: Likert Scale:** This consist of 30 items to assess attitude regarding palliative care. It is 5-point scale.

The options included (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly agree.

The scores were categorized as:

The total score is 150

The maximum score is  $30 \times 5 = 150$  & Minimum score is  $30 \times 1 = 30$

>90 - Favorable Attitude.

90 - Neutral Attitude.

<90 - Unfavorable Attitude.

#### 1.6.4. Content Validity of tool

**Validity:** it refers to how accurately the instrument yields information about the true or real variables studied.<sup>48</sup>

Content Validity refers to the method of measurement that actually measures the expected content. It involves a systematic examination of the tool to determine whether it covers all the aspects of the study.<sup>46</sup>

In this study content validity of the tool & module was done by 15 experts from varied fields . The suggestions & recommendations that were given by the guide & the experts were incorporated into the tool & module.

### 1.6.5 Reliability of the tool

**Reliability:** It is the extent to which the instrument yields the same results on repeated measures. It is the degree of consistency of dependability with which instrument measures an attribute.<sup>35</sup>

### 1.6.6. Reliability of Tool

### 1.6.7. Pre-testing of the tool

Pre testing of the tool to determine the feasibility & clarity of tool. Samples were taken from

## 1.7. Intervention Programme

The experimental group was given a computer assisted instruction on palliative care that was on website of MGM New Bombay College of Nursing. The researcher provided them the password to access the module.

The steps to prepare the computer assisted instruction module were:

1. Review of literature
2. Framing the outline of the content
3. Preparation of content
4. Preparation of the content (Appendix )
5. Validation of the content & tool (Appendix G)
6. Pretesting of the intervention programme.

## 1.8. Ethical Consideration

- Ethical approval was obtained from the Institutional Ethical Review Committee of MGM Institute of Health Sciences, Kamothe, (Appendix B).
- Permission was obtained from guide & authorities of the selected nursing colleges for data collection (Appendix C).
- Before collecting the data, informed consent was obtained from each sample involved in the study. (Appendix E)

### 1.9. Pilot Study

It is a small-scale version of the actual study conducted with the purpose of testing & potentially refining the research plan.<sup>37</sup>

- Pilot study was conducted from 19/01/2022 to 25/01/2022 at nursing colleges of Navi Mumbai on 10 samples.
- Its purpose was to ensure the feasibility & practicality of the design.
- The findings of the study helped the investigator to visualize the practical problem that could be encountered while conducting the main study like arranging dates to conduct the study as students were not available physically at the college due to COVID-19 pandemic.
- Pre-test was done for both the experimental and control group.
- Its also provided the researcher an insight into the actual process of data collection & analysis.

### 1.10. Data Collection Process

- Data collection process was a step-by-step procedure.
- Many studies were reviewed & frequent interaction with expert (Appendix) were done to develop the tool.
- After obtaining the administrative permission from the two colleges of Navi Mumbai, data collection was done from 17/02/2022 – 23/02/2022.

- Samples were introduced; informed consent (Appendix F) was obtained from each of them.
- On the first day the pre-test was conducted to assess knowledge of both experimental & control group.
- After 7 to 10 days, researcher has conducted post-test to assess knowledge & attitude regarding palliative care in experimental group & without intervention in control group.

### 1.11. Plan for Data Analysis

The plan for data analysis was developed with the opinion of guide, Expert's statistics. Analysis was based on objectives of the study.

The investigator had plans to analyze the data in the following manner:

- **Section 1:** Analysis of demographic data of final year BSc nursing students will be done using frequency & percentage.
- **Section 2:** Analysis of knowledge regarding palliative care will be done using frequency, percentage & Wilcoxon signed ranks test.
- **Section 3:** Analysis of attitude regarding palliative care will be done using frequency, percentage & Wilcoxon signed ranks test.
- **Section 4:** Correlation of Knowledge and Attitude regarding palliative care will be done using Pearson correlation coefficient.

### Summary:

This chapter dealt with Research Approach & Design, variables under study, setting of the study, Population, Sample & Sampling technique, data collection technique, data collection instrument/ tool, intervention programme, ethical consideration, pilot study, Data collection process, Plan for data Analysis, & the next chapter would deal with the data analysis & its interpretation.



## Chapter 4: Analysis and Interpretation

Statistical analysis is the organization & analysis of quantitative data using statistical procedures, including both descriptive & inferential statistics. The purpose of analysis is to reduce the data to an intelligible & interpretable form so that the relation of the research problem can be studied & tested.<sup>51</sup>

This chapter deals with analysis and interpretation of the data collected from 53 samples of Final year B.Sc. Nursing students in selected Nursing College. The present study has been taken up to assess the effectiveness of computer assisted instruction on knowledge and attitude regarding palliative care among undergraduate nursing students. Analysis and interpretation is based on the objectives of the study.

A structured questionnaire used to assess the knowledge and Likert Scale to assess the attitude regarding palliative care. The analysis was done with the help of inferential and descriptive statistics.

### THE OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding palliative care among undergraduate nursing students before and after computer assisted instruction.
2. To assess the attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction.
3. To compare the knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in experimental and control group.

### Hypotheses:

The chosen hypothesis for the research is the null hypothesis. The level of significance to accept or

reject the hypothesis is at 0.5 level ( $p=0.05$ )

H0 : There is no difference in the knowledge regarding Palliative care among undergraduate nursing students before and after educational intervention in experimental and control group.

H1 : There is a difference in the knowledge regarding Palliative care among undergraduate nursing students before and after educational intervention in experimental and control group.

H02 : There is no difference in the attitude regarding Palliative care among undergraduate nursing students before and after educational intervention in experimental and control group.

H2 : There is a difference in the attitude regarding Palliative care among undergraduate nursing students before and after educational intervention in experimental and control group.

## ORGANIZATION OF FINDINGS

The analysis and interpretation of the observations are given in the following section:

- **Section A :** Distribution of undergraduate nursing students with regards to demographic variables.
- **Section B :** Assessment of level of knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction.
- **Section C:** Comparison of knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in experimental and control group.

#### Section 4.1 : Analysis of demographic data of B.Sc. nursing Students.

**Section 4.1.A :** Distribution of samples based on demographic data using frequency & percentage in experimental and control group.

**Table 1:** Distribution of sample based on demographic data using frequency & percentage among experimental & control group.

n=28+25=53			
Demographic Variables	Experimental Group (n=28)		Control Group (n=25)
Gender	f	%	f %
Male	5	(17.9%)	5(20%)
Female	23	(82.1%)	20(80%)
Age in years			
19-21 yrs	18	(64.3%)	19(76%)
22-24 yrs	10	(35.7%)	6(24%)
Previous knowledge about palliative care			
Yes	26	(92.9%)	25(100%)
No	2	(7.1%)	0(0%)
Source of knowledge			
Friends	1	(3.6%)	2(8%)
Books	18	(64.3%)	14(56%)
Social Media	7	(25%)	9(36%)
Observed in hospital	2	(7.1%)	0(0%)
Any other	0	(0%)	0(0%)
Is Palliative care previously taught in the class			
Yes	27	(96.4%)	25(100%)
No	1	(3.6%)	0(0%)
Year			
First Year	0	(0%)	0(0%)
Second Year	6	(21.4%)	14(56%)
Third Year	20	(71.4%)	11(44%)
Fourth Year	2	(7.1%)	0(0%)

**Table 1** depicts that; out of 53 students, majority 23 (82.1%) students from experimental group were female and 5 (17.9%) students were male in experimental group. whereas In control group 20(80%) female students and 5(20%) male students in control group.

Majority 18 (64.3%) students in experimental group were in age group 19-21 and 10 (35.7%) students were in age group 22-24 years , whereas in control group majority 19(76%) students were in age group of 19-21 years and 6(24%) students were in age group 22-24 years.

Majority 26 (92.9%) students in experimental group had previous knowledge about palliative care; whereas in control group 25(100%) students had precious knowledge about palliative care.

Majority 18 (64.3%) students had source of knowledge from books in experimental group; whereas in control group majority 14(56%) students' source of knowledge was books.

Majority 27(96.4%) students in experimental group were previously taught about palliative care in class; whereas 25(100%) in control group.

In experimental group, Majority 20 (71.4%) students said they were taught about palliative care in third year; whereas in control group majority 14 (56%) students said they were taught about palliative care in second year and 11 (44%) said they were taught about palliative care in third year.

#### Section 4.2.B.: Analysis of knowledge regarding care of patient in palliative care before and after computer assisted instruction.

**Section B :** Assessment of level of knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction.

Table 2: Distribution of knowledge regarding palliative care in experimental group.

Category	Pre-test		Post-test	
	f	%	f	%
Good	0	0	26	92.86
Average	21	75	2	7.14
Poor	7	25	0	0

**Table 2,** show that out of 28 students in experimental group; majority 21(75%) students had average knowledge & 7(25%) had poor knowledge during the pre-test; whereas majority 26(92.86%) students had good knowledge regarding palliative care & 2 (7.14%) students had average knowledge regarding palliative care during the post-test.

Table 3: *Distribution of knowledge and attitude regarding palliative care in control group.*

Category	Pre-test		Post-test	
	f	%	f	%
Good	0	0	2	8
Average	17	68	23	92
Poor	8	32	0	0

**Table 3**, shows that 8(32%) of the undergraduate nursing students in pre-test had poor level of knowledge score, 17(68%) in pre-test and 23 (92%) of undergraduate nursing students in post-test had average and 2(8%) of undergraduate nursing students in post-test had good level of knowledge score about palliative care.

### Section 4.2.C.: Analysis of computer assisted instruction regarding palliative care in experimental and control group.

**Table 4:** Effect of computer assisted instruction on knowledge regarding palliative care in experimental and control group.

n=28									
Knowledge	Pre-test		Post test		Difference		W	P-Value	Level of Significance
	Mean	SD	Mean	SD	Mean	SD			
Experimental Group	8.21	1.03	16.39	1.37	8.18	0.34	24.81	<0.001	S
Control Group	8.21	1.28	11.12	1.96	2.8	0.68	24.81	0.229	NS

\*S- Significant \* Statistically highly Significant at 0.1% level i.e.,  $P < 0.001$

\*NS- Non Significant

Table 4 depicts; that the mean pre-test knowledge was 8.21 with standard deviation 1.03; whereas the post-test mean was 16.39 with a standard deviation 1.37. Wilcoxon signed rank test was applied to find whether there is statistically significant difference between the pre & post knowledge score. The p-value

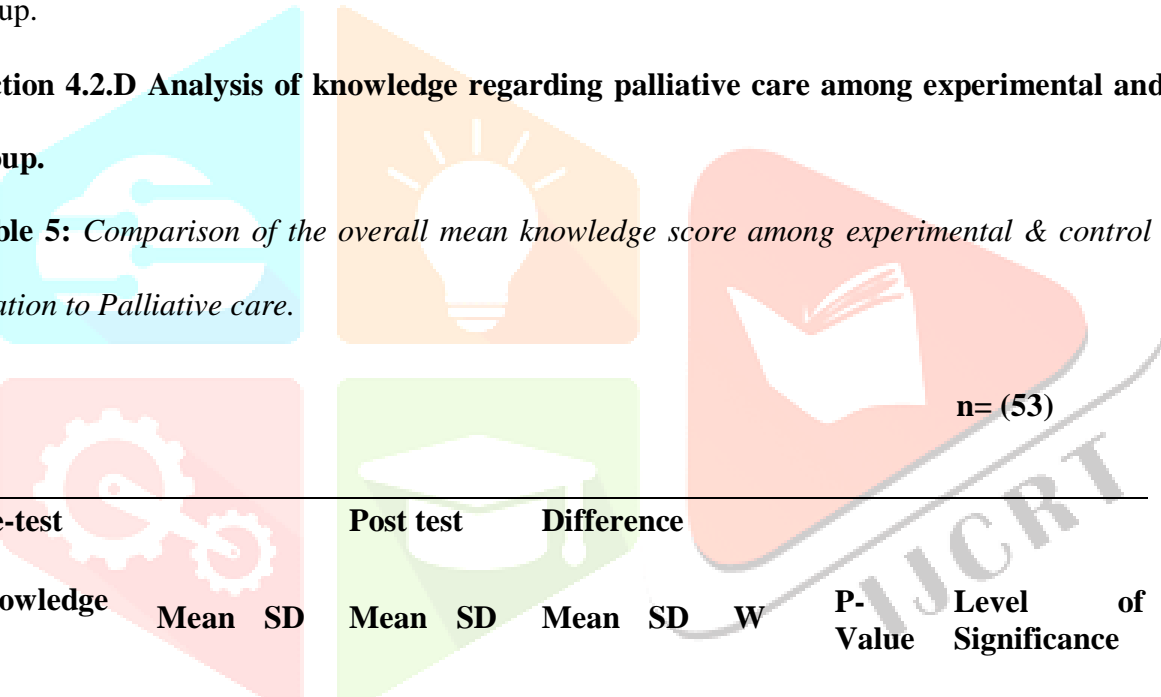
of 0.00(<0.001) indicates that there is statistically high significance difference between the pre & post-test in knowledge score in the experimental group.

Hence **H<sub>0</sub>** is rejected. The computer Assisted Instruction was found to be effective in improving the knowledge regarding Palliative care in the experimental group.

In control group, mean pre-test knowledge was 8.32 with standard deviation 1.28; whereas the post-test mean was 11.12 with a standard deviation 1.96. Wilcoxon signed rank test was applied to find whether there is statistically significant difference between the pre & post knowledge score. A p-Value of 0.229 indicates that there is statistically high significant difference between the knowledge score of control group.

#### Section 4.2.D Analysis of knowledge regarding palliative care among experimental and control group.

**Table 5:** Comparison of the overall mean knowledge score among experimental & control group in relation to Palliative care.



Pre-test		Post test		Difference					
Knowledge	Mean	SD	Mean	SD	Mean	SD	W	P-Value	Level of Significance
Experimental Group	8.21	1.03	16.39	1.37	8.18	0.34	24.81	<0.001	S
Control Group	8.32	1.28	11.12	1.96	2.8	0.68	24.81	0.229	NS

\*S- Significant, NS- Non-Significant

\* Statistically highly Significant at 0.1% level i.e.,  $P < 0.001$

**Table 5;** depicts that in experimental group; the mean difference pre-test knowledge score was 8.18 with

standard deviation 0.34 whereas in control group mean difference was 2.8 with a standard deviation difference 0.68.

Wilcoxon signed rank test was applied to find whether there is statistically significant difference between the knowledge score of experimental group & control group. A p- value of  $0.00(<0.05)$  indicates that there is statistically high significant difference between the knowledge score of experimental group & control group.

Computer Assisted Instruction was more effective in improving the knowledge regarding palliative care among final year B.Sc. nursing students.

#### Section 4.2.E. Analysis of level of attitude in pre-test and post-test in experimental and control group.

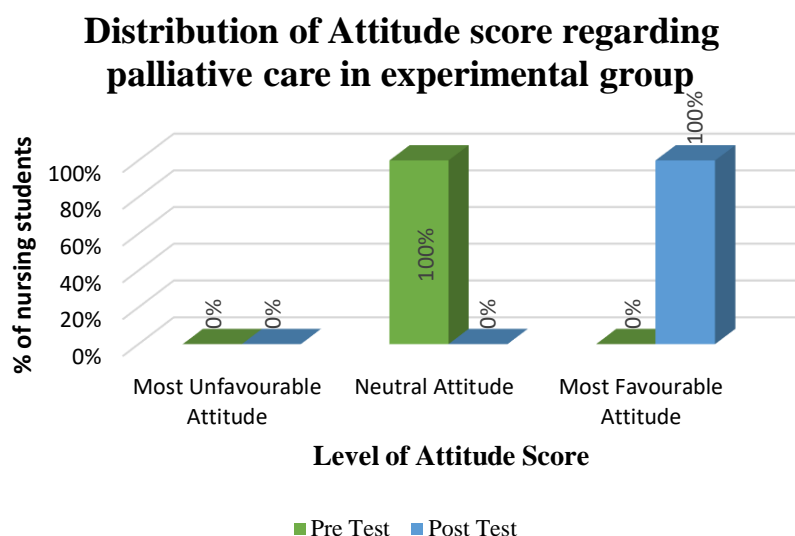
**Table 6:** Assessment with level of attitude score in experimental group

n= 53

Level of attitude	Pre-test		Post-Test	
	f	%	f	%
Unfavorable attitude	0	0	0	0
Neutral Attitude	28	100	0	0
Favorable attitude	0	0	28	100

**Table 6:** shows that 28(100%) students had neutral attitude towards palliative care in pre-test and 28(100%) students had most favorable attitude in post-test towards palliative care in experimental.

n=28



**Figure 3 :** Distribution of Attitude score regarding palliative care in experimental group.

**Figure 3** depicts that significant difference in attitude scores during pre-test & post-test in experimental group.

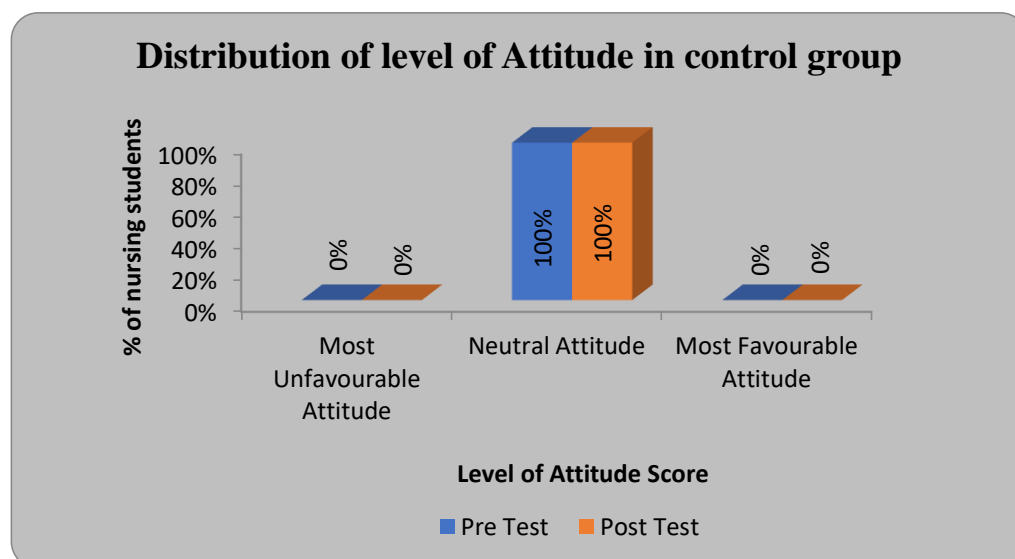
**Table 7:** Assessment with level of attitude score in control group

**n= 25**

Level of attitude	Pre-test		Post-Test	
	f	%	f	%
Most unfavorable attitude	0	0	0	0
Neutral Attitude	25	100	25	100
Most favorable attitude	0	0	0	0

**Table 7** shows that 25(100%) students had neutral attitude towards palliative care in pre-test and 25(100%) students had most neutral attitude in post-test towards palliative care in control group.

n=25



**Figure 4 :** Distribution of Attitude score regarding palliative care in control group.

**Figure 4** depicts that there is No significant difference in attitude scores during pre-test & post-test in control group.

#### Section 4.2.F.: Distribution of students based on item wise attitude score regarding palliative care.

**Table 8:** Item wise analysis of difference between attitude score in pre and post-test of undergraduate nursing students of experimental group.

n=28

Item	Pre-Test mean	Post mean	Test	Mean Difference
Providing care to dying patients	12.60	21.60	- 9	
Communication with family and dying patients	13.35	21.85	- 8.50	
Confronting deaths	13.50	22.17	- 8.67	
Training in palliative care	12.71	22.64	- 9.92	
Providing psychological, social and spiritual support	12.21	21.67	- 9.46	

Table 8 shows item wise analysis of pre-test and post-test attitude scores of undergraduate nursing students regarding Palliative Care in experimental group.

Mean attitude score for the item providing care to dying patients in pre-test was 12.60 and in post-test it was 21.60, for the item communication with family and dying patients in pre-test it was 13.35 and in post-test it was 21.85, for the item confronting deaths in pre-test it was 13.50 and in post-test it was 22.17, for the area of training in palliative care in pre-test it was 12.71 and in post-test it was 22.64 and for the item providing psychological, social and spiritual support in pre-test it was 12.21 and in post-test it was 21.67. Hence it is statistically interpreted that the Computer Assisted Instructions on item wise attitude regarding Palliative care among undergraduate nursing students of experimental group was effective. Thus, the  $H_1$  is accepted.

#### **Section 4.3.A.: Comparison of knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in experimental and control group.**

This section deals with the comparison of knowledge and attitude regarding Palliative care among undergraduate nursing students before and after computer assisted instructions in experimental and control group. The hypothesis is tested statistically with distribution of pretest and posttest mean and standard deviation and mean percentage knowledge and attitude score.

The levels of knowledge during pretest and post-test are compared to prove the effectiveness of Computer Assisted Instructions. Significance of difference at 5% level of significance is tested with student's paired 't' test and tabulated 't' value is compared with calculated 't' value. Also, the calculated 'p' values are compared with acceptable 'p' value i.e. 0.05.

#### Section 4.3.B. : Analysis of knowledge score in pre-test and Post-test of experimental and control group.

**Table 09 :** Significance of difference between knowledge score in pre and post-test of undergraduate nursing students of experimental group.

n=28

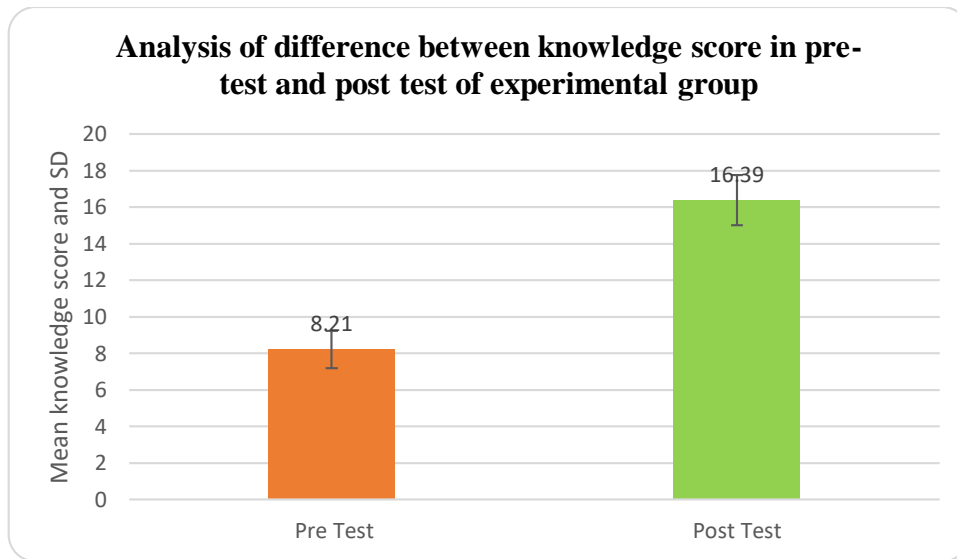
Knowledge	Mean	SD	Mean Difference	t-value	p-value	Level of significance at 5%
Pre-Test	8.21	1.03	8.17	24.81	0.0001	S
Post Test	16.39	1.37				

\*S- Significant

**Table 09** depicts, the comparison of pre-test and post-test knowledge scores of undergraduate nursing students regarding Palliative Care. It is statistically interpreted that the Computer Assisted Instructions on knowledge regarding Palliative care among undergraduate nursing students was effective. Thus, the

H<sub>1</sub> is accepted.

n=28



**Figure 5:** analysis of difference between knowledge score in pre-test and post test of experimental group.

Figure 5, depicts that statistically significant difference in knowledge during pre-test and post test of experimental group.

**Table 10:** Significance of difference between knowledge score in pre and post-test of undergraduate nursing students of control group.

n=25

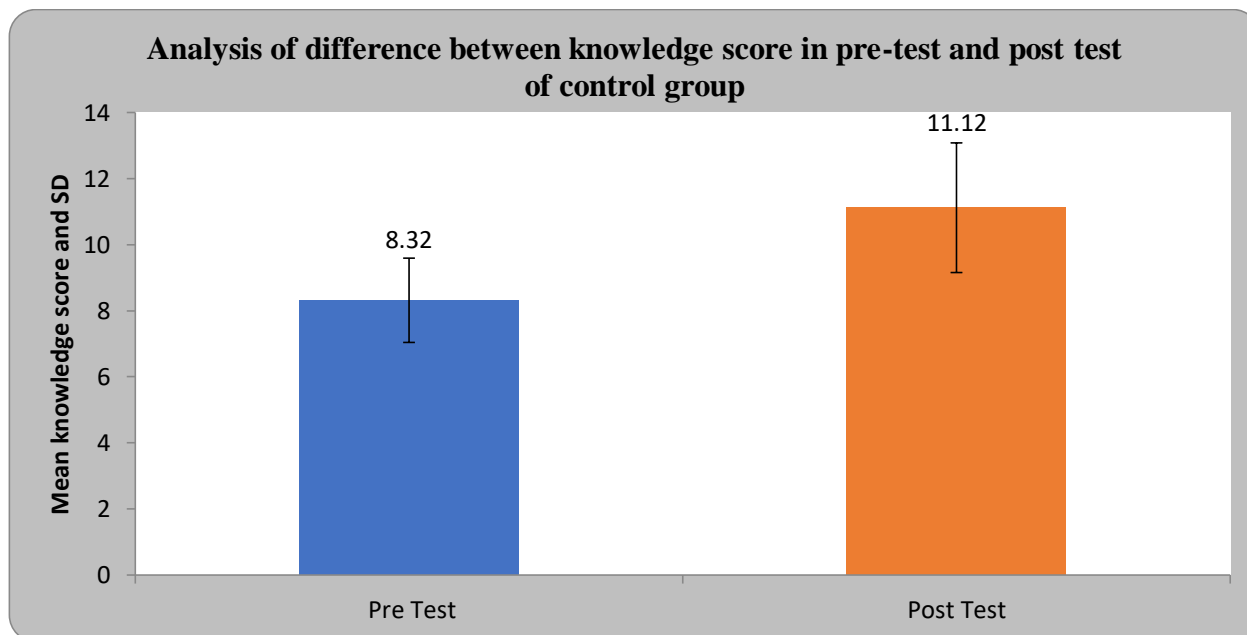
knowledge	Mean	SD	Mean Difference	t-value	p-value	Level of significance at 5%
Pre-Test	8.32	1.28	2.80	6.06	0.0001	S
Post Test	11.12	1.96				

\*S- Significant

**Table 10** depicts the comparison of pre-test and post-test knowledge scores of undergraduate nursing students regarding Palliative Care. In pre-test mean was 8.32 and 11.12 mean in control group. The calculated 't' value i.e., 6.06 are much higher than the tabulated value at 5% level of significance for

overall knowledge score of undergraduate nursing students which is statistically acceptable level of significance. Hence it is statistically interpreted that the Computer Assisted Instructions on knowledge regarding Palliative care among undergraduate nursing students was effective. Thus, the  $H_1$  is accepted.

n=25



**Figure 6:** analysis of difference between knowledge score in pre-test and post-test of control group. Figure 6, depicts that statistically there is no significant difference in knowledge during pre-test and post test of control group

#### Section 4.3.C. : Analysis of attitude score in pre-test and Post-test of experimental and control group.

**Table 11:** Significance of difference between attitude score in pre-test and post-test of undergraduate nursing students of experimental group.

n=28

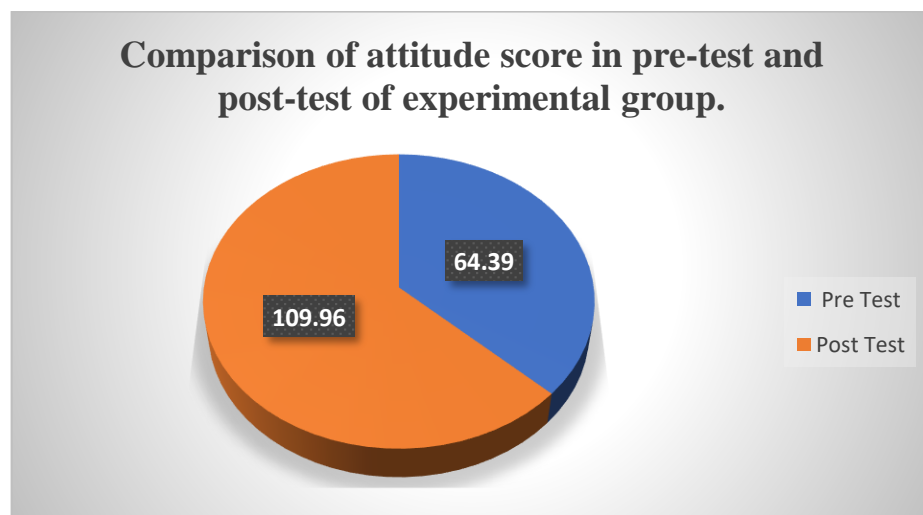
Attitude	Mean	SD	Mean Difference	t-value	p-value	Level of significance at 5%
Pre-Test	64.39	3.83	45.57	47.12	0.0001	S
Post Test	109.96	4.71				

\*S- Significant

**Table 11,** shows the comparison of pre-test and post- test attitude scores of undergraduate nursing students regarding Palliative Care. In pre-test mean was 64.39 in pre-test whereas in post-test it was

significantly increased to 109.96 in experimental group. The calculated 't' value i.e. 47.12 are much higher than the tabulated value at 5% level of significance for overall attitude score of undergraduate nursing students which is statistically acceptable level of significance. Hence it is statistically interpreted that the Computer Assisted Instructions improved the attitude among nursing students was effective. Thus, the  $H_1$  is accepted.

n=28



**Figure 7 :** analysis of difference between attitude score in pre-test and post-test of experimental group. Figure 7, depicts the significant difference between attitude score in pre-test and post-test of experimental group.

**Table 12:** Significance of difference between attitude score in pre-test and post-test of undergraduate nursing students of control group.

n=25

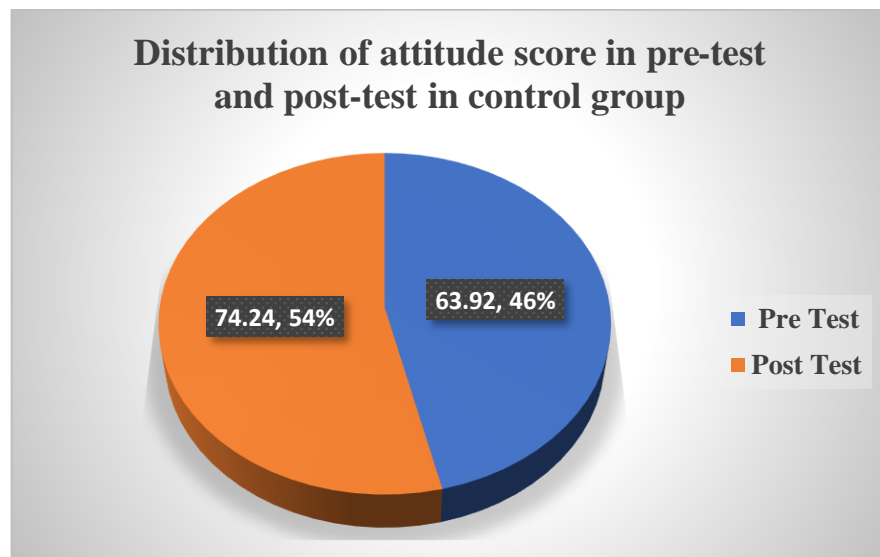
Attitude	Mean	SD	Mean Difference	t-value	P-value	Level significance of at 5%
Pre-Test	63.92	8.06	10.32	5.32	0.0001	S
Post Test	74.24	7.46				

\*S - Significant

**Table 12** shows the comparison of pre-test and post-test attitude scores of undergraduate nursing students regarding Palliative Care. In pre-test mean attitude was 63.92 whereas in post test mean attitude

was 74.24, hence it is statistically interpreted as there was no significant difference between attitude in control group. Thus,  $H_2$  is rejected.

n=25



**Figure 8 :** analysis of difference between attitude score in pre-test and post-test of control group.

Figure 8, depicts there is no significant difference between attitude score in pre-test and post-test of control group.

#### Section 4.4. Comparison of knowledge and attitude regarding palliative care among undergraduate nursing students of experimental and control group.

**Table 13:** Significance of difference in knowledge score in post-test of undergraduate nursing students of experimental and control group.

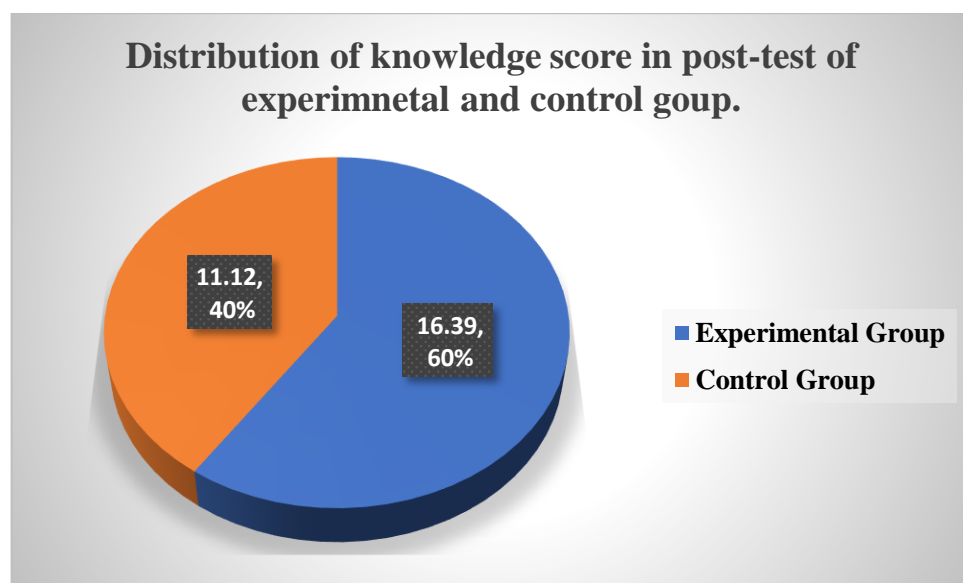
n=53

Group	Mean	SD	Mean Difference	t-value	p-value	Level of significance at 5%
Experimental	16.39	1.37	5.27	11.43	0.0001	S
Control	11.12	1.96				

\*S - Significant

**Table 13** shows the comparison of post- test knowledge scores of undergraduate nursing students regarding Palliative Care in two groups. In experimental group mean was 16.39 for n=28 and 11.12 mean in control group for n=25, level of significance was acceptable. Hence it is statistically interpreted that the Computer Assisted Instructions on knowledge regarding Palliative care among undergraduate nursing students of two groups was effective. Thus, the  $H_1$  is accepted.

n=53



**Figure 9:** Analysis of knowledge score during post-test of experimental and control group.

Figure 9 depicts the significant increase in knowledge score in experimental group during post test as compare to control group.

**Table 14:** Significance of difference between Attitude score in post- test of undergraduate nursing students of experimental and control group.

n=53

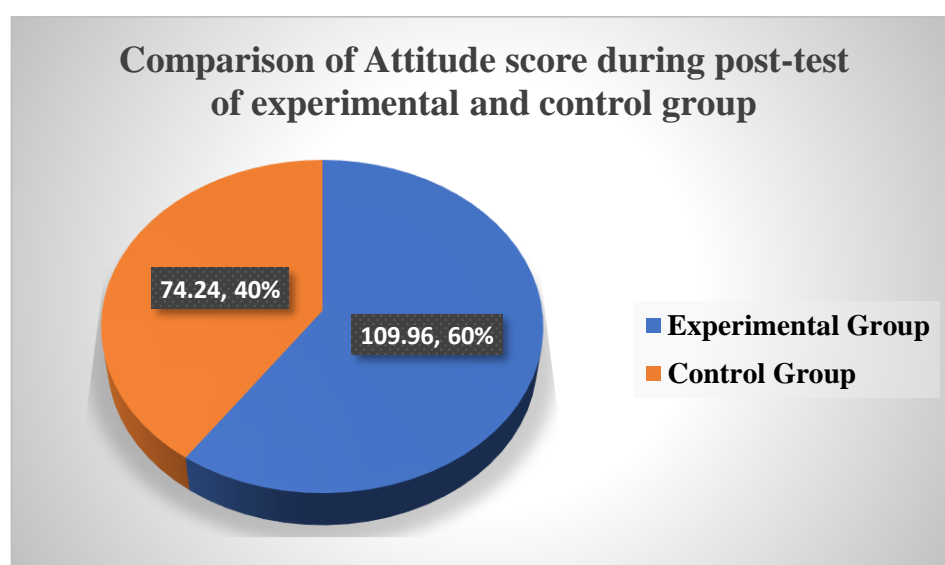
Group	Mean	SD	Mean Difference	t-value	p-value	Level of significance at 5%
Experimental	109.96	4.71	35.72	21.05	0.0001	S
Control	74.24	7.46				

--	--	--	--	--	--	--	--

\*S - Significant

**Table 14** depicts the post- test attitude scores of undergraduate nursing students regarding Palliative Care in two groups. In experimental group mean was 109.96 for n=28 and 74.24 mean in control group for n=25, level of significance was acceptable. Hence it is statistically interpreted that the Computer Assisted Instructions on knowledge regarding Palliative care among undergraduate nursing students of two groups was effective. Thus, the  $H_1$  is accepted.

n=53



**Figure 10:** Analysis of comparison of Attitude score during post-test of experimental and control group. Figure 10, depicts the attitude in post-test shows significant difference in attitude among experimental group during as compared to control group.

## Summary

This chapter dealt with the analysis & Interpretation of the research data which is categorized into 4 sections with sub sections according to the objectives & hypothesis of the study. Analysis was done using descriptive & inferential statistics. Analysis of the knowledge & attitude of the students were described using Wilcoxon signed ranks test & for determining the effect of computer assisted instruction.

The section revealed that there was a significant difference in knowledge & practice score of students

in relation to computer assisted instruction showing the effectiveness of the same. The following chapter would deal with the findings, discussion, conclusion, limitations & recommendations of the study.



## **Chapter 5: Findings, Discussion, Conclusion, Limitations, Implications & Recommendations**

This chapter describes a brief summary of the study & its significant findings. It also includes implications, suggestions & recommendations for further study. The finding of the study facilitates information needed for evidence-based practice to be used in nursing education. The present study has been conducted to assess the effect of computer assisted instruction on content knowledge & attitude

regarding palliative care among undergraduate nursing students.

The objectives of the study were as follows:

1. To assess the knowledge regarding palliative care among undergraduate nursing students before and after computer assisted instruction.
2. To assess the attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction.
3. To compare the knowledge and attitude regarding palliative care among undergraduate nursing students before and after computer assisted instruction in experimental and control group.



### 5.1. Major Findings of the study

Findings of the study have been organized & discussed under the following points:

#### 5.1.1 Findings related to demographic data of the B.Sc. Nursing students

- Out of 28 students in experimental group majority 23 (82.1%) students were female. Whereas out of 25 students in control group majority 20(80%) students were females.
- Majority 26(92.9%) students had previous knowledge about palliative care in experimental group, whereas 25 (100%) students had previous knowledge about palliative care in the

control group.

- Majority 18(64.3%) students' source of knowledge was books in experimental group, whereas majority 14(56%) students in control group also had source of knowledge from the books.
- In experimental group, 27(9.4%) students reported palliative care was previously taught in class, whereas 25(100%) students in control group reported palliative care was taught in class.



### 5.1.2 Findings related to knowledge regarding palliative care.

- Out of 28 students in experimental group, 7(25%) of students had poor knowledge & 21(75%) had average knowledge during pre-test while majority 26(92.86%) students had good knowledge & 2(7.14%) students had average knowledge during post-test regarding palliative care.
- Out of 25 students in control group; majority 17(68%) students had average knowledge & 8(32%) students had poor knowledge during pre-test and even during post-test majority 23(92%) students had an average knowledge & only 2(8%) students had good knowledge regarding palliative care.

- Statistical analysis shows that in experimental group; the mean pre-test knowledge was 8.21 with standard deviation 1.03; whereas the post-test mean was 16.39 with a standard deviation of 1.3. Wilcoxon signed rank test gives p- value as 0.00 that has a high significance as  $p < 0.001$  indicates that there is statistically difference between the pre & post-test in knowledge.
- In experimental group; the mean difference pre-test knowledge score was 8.81 with standard deviation 0.34 whereas in control group mean difference was 2.8 with a standard deviation difference 0.68.
- Statistical analysis shows that Wilcoxon signed rank test gives p-value as 0.00 that has a high significance as  $p < 0.05$  indicates that there is statistically difference between the knowledge score of experimental group & control group.
- Computer assisted instruction was more effective in enhancing the knowledge of final year B.Sc. Nursing students regarding palliative care. Hence it has been proved that Computer Assisted Instruction was more effective in improving the knowledge on palliative care among final year B.Sc. Nursing students.

### 5.1.3 Findings related to attitude regarding palliative care.

- Favorable attitude was noted for all 28(100%) students in experimental group; whereas neutral attitude was noted for all 25(100%) students in the control group.
- Statistical analysis shows that in experimental group; the mean attitude score was 64.39 with standard deviation of 3.83 in pre-test whereas mean attitude in post was 109.96 with standard deviation 4.71.
- Statistical analysis interprets that Wilcoxon signed rank test gives p-value as ( $< 0.001$ ) indicates that there is statistically high significant difference between the practice score of

experimental & control group.

- Hence computer assisted instruction on palliative care improved attitude of final year B.Sc. Nursing Students.



## 5.2. Discussion

### 5.2.1. Discussion regarding knowledge

Majority 21 (75%) Students had average knowledge regarding palliative care prior to administration of Computer assisted instruction in the experimental group; whereas after the administration of Computer assisted instruction, majority 26(92.86%) had a good knowledge score.

Statistically proved that after administration of Computer assisted instruction significantly improved the mean knowledge score regarding palliative care from 8.21 to16.39.

A cross sectional survey was conducted on knowledge of palliative care and attitude towards nursing

the dying patients, there was significant correlation between level of knowledge and attitude towards care of patients, participants level of knowledge increased and positive attitude was developed.<sup>22</sup>

### 5.2.2. Discussion regarding attitude

Evaluation of student's attitude before administrating Computer assisted instruction, this study revealed that all 28(100%) students adopted most favourable attitude towards palliative care.

In control group all 25(100%) students had neutral attitude towards palliative care

There high significant difference in the attitude mean score as 109.96 in experimental group & 74.24 in control group.

The result of the present study has shown that knowledge and attitude regarding palliative care enhanced through computer assisted instruction. Interventional study was conducted and result shows that there is a significant enhancement in knowledge and attitude regarding palliative care among nurses.<sup>52</sup>

### 5.3. Conclusion

The findings of the study revealed that computer assisted instruction was effective in improving the knowledge & attitude regarding palliative care. There was high significant change observed in knowledge & attitude regarding palliative care after the intervention of computer assisted instruction. Also, students had most favourable attitude towards palliative care.

### 5.4. Limitation

- Data collection was done using google form due to COVID-19 outbreak.
- Attitude was noted on the basis of google form.

### 5.5. Implications of the study

The implication of the study can be discussed in four areas mainly; nursing practice, nursing education,

nursing administration & nursing research.

### 5.5.1. Nursing Practice

The nurse is personnel that always in contact with the patient in clinical as well as in community. The study revealed that majority of the students had an average knowledge regarding palliative care. Thus, the study can contribute to the areas of nursing practice as effort to be taken by nursing tutor/ clinical instructor to train the students when they are posted in clinical postings. Students can be posted in specialized palliative care units to understand and have experience that would increase knowledge and attitude.

### 5.5.2. Nursing education

Education is the means through which students are prepared for practice in various setting. Nurse educator should take more initiative in imparting the knowledge. Also, she / he should give more emphasise to clinical teaching specially in palliative care/ end of life care. Computer assisted instruction can be used creatively & effectively to teach students in better way to improve knowledge and attitude regarding palliative care.

### 5.5.3. Nursing administration

This study will help the nurse administrator to focus more in the assessment of students' knowledge and attitude prior to posting students in various clinical areas. That helps to avoid any incident that may occur due to insufficient knowledge of students. Nurse administrator can assign or appoint palliative care nurse to guide and mentor students in the palliative care units.

### 5.5.4. Nursing Research

Nursing research is a necessary part of day-to-day life of nursing education. Nursing research is to expand & broaden the scope of nursing. Research is the only available way to find evidence to provide holistic nursing care. This study would help the nurse researcher to explore the different innovative methods to make understand the concept of palliative care more precisely & clearly. The finding and

design of the study can be utilized for conducting further study and it has opened further scope for study.



## 5.6. Recommendations

- I. A similar study can be conducted on a large sample size to generalize the findings.
- II. Alternative methods of teaching strategy can be compared with computer assisted instruction to analyse the effectiveness of both the methods & to have more generalization.
- III. A descriptive study can be conducted on large sample to assess the practices in palliative care settings.
- IV. Future studies should focus on clarifying problems in different stages of implementation to build more complete understanding of implementing computer assisted instruction.
- V. Further research can be conducted to develop modules to rectify barriers in palliative care.

## Summary

This chapter deals with the summary of the research study, bringing forth the major findings of the

study, conclusion, nursing implications, limitations & recommendations.

## References

1. Alhamdoun A, Al Qadire M, Aldiabat KM, Al-Rawajfah O. Nursing students' knowledge of palliative care: a short literature review. International Journal of Palliative Nursing. 2021 Feb 2;27(1):54-7.
2. Felix Buendia , Juan Vincente, Yolanda Agra, Almudena Areosa, Marta pelayo. Effects of online palliative care training on knowledge, attitude and satisfaction of primary care physicians. BMC family Practice ,2011 May 23 , 2296-12-37
3. Roth AR, Canedo AR. Introduction to hospice and palliative care. Primary Care: Clinics in Office Practice. 2019 Sep 1;46(3):287-302.
4. Elisabeth Patiraki, Stavroula Sgourou, Maria Christou, Maria Dimoula, Grigorious Kotronoulas. Undergraduate nursing students' knowledge about palliative care and attitudes towards end-of-life care: A three-cohort, cross-sectional survey. Nurse Education Today Volume 74, March 2019, Pages 7-14.

5. Wilson O, Avalos G, Dowling M. Knowledge of palliative care and attitudes towards nursing the dying patient. *British Journal of Nursing*. 2016 Jun 9;25(11):600-5.
6. Elisabeth Patiraki, Stavroula Sgourou, Maria Christou, Maria Dimoula, Grigorious Kotronoulas. Undergraduate nursing students' knowledge about palliative care and attitudes towards end-of-life care: A three-cohort, cross-sectional survey. *Nurse Education Today* Volume 74, March 2019, Pages 7-14
7. Harazneh Lubna, Ahmad Ayed, Sumaya Sayej, Imad Fashafsheh, Faeda Eqtait Nurses' Knowledge and Attitudes towards the Palliative Care
8. Ahmad E. ABOSHAIAH, Predictors of Palliative Care Knowledge Among Nursing Students in Saudi Arabia: A Cross-Sectional Study. *The journal of Nursing Research* 1, Feb 2020
9. Dimoula M, Kotronoulas G, Katsaragakis S, Christou M, Sgourou S, Patiraki E. Undergraduate nursing students' knowledge about palliative care and attitudes towards end-of-life care: a three-cohort, cross-sectional survey. *Nurse Education Today*. 2019 Mar 1;74:7-14.
10. Berndtsson IE, Karlsson MG, Rejnö ÅC. Nursing students' attitudes toward care of dying patients: A pre-and post-palliative course study. *Heliyon*. 2019 Oct 1;5(10):e02578
11. Ina E.K. Berndtsson, Margareta Karlsson, Asa C.U. Rejno Nursing students' attitudes toward care of dying patients: A pre- and post-palliative course study, 2019 oct. PMC6812234.
12. Harazneh Lubna, Ahmad Ayed, Sumaya Sayej, Imad Fashafsheh, Faeda Eqtait Nurses' Knowledge and Attitudes towards the Palliative Care ISSN 2222-1735 Vol. No. 4, 2015
13. Ray PP. Web Based E-Learning in India: the Cumulative Views of Different Aspects. *Indian J Comput Sci Eng*. 2010;1(4):340–52
14. Ina E.K. Berndtsson, Margareta Karlsson, Asa C.U. Rejno
15. Nursing students' attitudes toward care of dying patients: A pre- and post-palliative course study.
16. Georgia H, Sara H Oxford Advance learners, dictionary. 6<sup>th</sup> edition. New York Oxford university Press:2005
17. Shebeer P. Basheer(2015), TEXTBOOK OF NURSING EDUCATION, 1<sup>st</sup> Edition, Emmess Medical Publishers, Bangalore Page No.159-165.

18. International council of nurses, nursing policy, nursing definition, ICN 2002.
19. Polit DF, Beck CT. Essentials of nursing research: Appraising evidence for nursing practice. Lippincott Williams & Wilkins; 2009, Page no. 186
20. Ahmad E. ABOSHAIQAH, Predictors of Palliative Care Knowledge Among Nursing Students in Saudi Arabia: A Cross-Sectional Study. The journal of Nursing Research 1, Feb 2020
21. Dimoula M, Kotronoulas G, Katsaragakis S, Christou M, Sgourou S, Patiraki E. Undergraduate nursing students' knowledge about palliative care and attitudes towards end-of-life care: a three-cohort, cross-sectional survey. Nurse Education Today. 2019 Mar 1;74:7-14.
22. Ayed A, Sayej S, Harazneh L, Fashafsheh I, Eqtait F. The Nurses' Knowledge and Attitudes towards the Palliative Care. Journal of Education and Practice. 2015;6(4):91-9.
23. Li J, Smothers A, Fang W, Borland M. Undergraduate Nursing Students' Perception of End-of-Life Care Education Placement in the Nursing Curriculum. Journal of hospice and palliative nursing: JHPN: the official journal of the Hospice and Palliative Nurses Association. 2019 Oct;21(5):E12.
24. Jiang Q, Lu Y, Ying Y, Zhao H. Attitudes and knowledge of undergraduate nursing students about palliative care: An analysis of influencing factors. Nurse education today. 2019 Sep 1;80:15-21.
25. Wilson O, Avalos G, Dowling M. Knowledge of palliative care and attitudes towards nursing the dying patient. British Journal of Nursing. 2016 Jun 9;25(11):600-5.
26. Prem V, Karvannan H, Kumar SP, Karthikbabu S, Syed N, Sisodia V, Jaykumar S. Study of nurses' knowledge about palliative care: a quantitative cross-sectional survey. Indian journal of palliative care. 2012 May;18(2):122.
27. Iranmanesh S, Razban F, Tirgari B, Zahra G. Nurses' knowledge about palliative care in Southeast Iran. Palliative & supportive care. 2014 Jun;12(3):203-10.
28. Sadhu S, Salins NS, Kamath A. Palliative care awareness among Indian

undergraduate health care students: A needs-assessment study to determine incorporation of palliative care education in undergraduate medical, nursing and allied health education. *Indian journal of palliative care*. 2010 Sep;16(3):154.

29. Bloomfield J, Roberts J, While A. The effect of computer-assisted learning versus conventional teaching methods on the acquisition and retention of handwashing theory and skills in pre-qualification nursing students: a randomised controlled trial. *International Journal of nursing studies*. 2010 Mar 1;47(3):287-94.

30. Cant RP, Cooper SJ. Simulation-based learning in nurse education: systematic review. *Journal of advanced nursing*. 2010 Jan;66(1):3-15.

31. Erfanian f, khadivzadeh t. The effects of simulation based and traditional education on students' skill in pelvic examination.

32. Junsawang c, jittivadhna k, luealamai s, pookboonmee r. Multimedia-aided instruction in teaching basic life support to undergraduate nursing students. *Advances in physiology education*. 2019 sep 1;43(3):300-5.

33. Kirkpatrick AJ, Cantrell MA, Smeltzer SC. Relationships among nursing student palliative care knowledge, experience, self-awareness, and performance: An end-of-life simulation study. *Nurse education today*. 2019 Feb 1;73:23-30.

34. Smith MB, Macieira TG, Bumbach MD, Garbutt SJ, Citty SW, Stephen A, Ansell M, Glover TL, Keenan G. The use of simulation to teach nursing students and clinicians palliative care and end-of-life communication: a systematic review. *American Journal of Hospice and Palliative Medicine®*. 2018 Aug;35(8):1140-54.

35. Dehghannezhad J, Hassankhani H, Taleghani F, Rahmani A, SattarPour S, Sanaat Z. Home care nurses' attitude towards and knowledge of home palliative care in Iran: A cross-sectional study. *Iranian Journal of Nursing and Midwifery Research*. 2021 May;26(3):272.

36. Abudari G, Zahreddine H, Hazeim H, Assi MA, Emara S. Knowledge of and attitudes towards palliative care among multinational nurses in Saudi Arabia. *International journal of*

palliative nursing. 2014 Sep 2;20(9):435-41.

37. Etafa W, Wakuma B, Fetensa G, Tsegaye R, Abdisa E, Oluma A, Tolossa T, Mulisa D, Takele T. Nurses' knowledge about palliative care and attitude towards end-of-life care in public hospitals in Wollega zones: A multicenter cross-sectional study. PloS one. 2020 Oct 7;15(10):e0238357.
38. Niles H, Fogg C, Kelmendi B, Lazenby M. Palliative care provider attitudes toward existential distress and treatment with psychedelic-assisted therapies. BMC Palliative Care. 2021 Dec;20(1):1-4.
39. Simon ST, Ramsenthaler C, Bausewein C, Krischke N, Geiss G. Core attitudes of professionals in palliative care: a qualitative study. International Journal of Palliative Nursing. 2009 Aug;15(8):405-11.
40. Madorin S, Iwasiw C. The effects of computer-assisted instruction on the self-efficacy of baccalaureate nursing students. Journal of nursing education. 1999 Sep 1;38(6):282-5
41. HOSSEININASAB S, ABD ELAHZADEH LF, FEYZ EH. The effect of computer assisted instruction and demonstration on learning vital signs measurement in nursing students.
42. Rouse DP. The effectiveness of computer-assisted instruction in teaching nursing students about congenital heart disease. Computers in nursing. 2000 Nov 1;18(6):282-7.
43. Chiu SC, Cheng KY, Sun TK, Chang KC, Tan TY, Lin TK, Huang YC, Chang JK, Yeh SH. The effectiveness of interactive computer assisted instruction compared to videotaped instruction for teaching nurses to assess neurological function of stroke patients: a randomized controlled trial. International journal of nursing studies. 2009 Dec 1;46(12):1548-56.
44. Bloomfield J, Roberts J, While A. The effect of computer-assisted learning versus conventional teaching methods on the acquisition and retention of handwashing theory and skills in pre-qualification nursing students: a randomised controlled trial. International Journal of nursing studies. 2010 Mar 1;47(3):287-94.

45. Gega L, Norman IJ, Marks IM. Computer-aided vs. tutor-delivered teaching of exposure therapy for phobia/panic: randomized controlled trial with pre-registration nursing students. *International Journal of Nursing Studies*. 2007 Mar 1;44(3):397-405.
46. Gilbert DA, Kolacz NG. Effectiveness of computer assisted instruction and small-group review in teaching clinical calculation. *Computers in Nursing*. 1993 Mar 1;11(2):72-7.
47. Sharma SK. *Nursing Research & statistics*. Reprinted. New delhi: Elsevier , a division of reed Elsevier India Private Limited; 2010
48. Sharma Suresh, *Nursing Research & statistics*, third edition , Elsevier, page no. 162-163.
49. Houser J. *Nursing Reasearch*. First Edit. New Delhi: Jones & bartlett Publishers; 2011
50. Basavanthappa B. *Nursing Research*. Second edi. New Delhi: Jaypee Brother Medical Publishers; 2007
51. Beck P&. *Nnursing Research, Generating & Assessing for Evidence for Nursing Practice*. 8th editio. Lippincott williams & Wilkins; 2008.
52. Hao Y, Zhan L, Huang M, Cui X, Zhou Y, Xu E. Nurses' knowledge and attitudes towards palliative care and death: a learning intervention. *BMC Palliative Care*. 2021 Dec;20(1):1-9.

## Bibliography

- Palliative Care Australia. A guide to palliative care service development: A population-based approach
- Rosland JH, Saunes TK, Bull AN. Treatment of intolerable sufferings in a hospice unit. Tidsskr Nor Laegeforen. 2007 Oct 18;127(20):2661-4.
- Palliative sedation. Position statement of the Hospice and Palliative Nurses Association. Available at: [http://www.hpna.org/position\\_PalliativeSedation.asp](http://www.hpna.org/position_PalliativeSedation.asp).
- Statement on sedation at the end of life. Position statement of the American Academy of Hospice and Palliative Medicine. Available at: <http://www.aahpm.org/positions/sedation.html>.
- Morita T, Tsuneto S, Shima Y. Definition of sedation for symptom relief: a systematic literature review and a proposal of operational criteria. J Pain Symptom Manage 2002;24:447-453.
- Rousseau P. Existential suffering and palliative sedation: a brief commentary with a proposal for clinical guidelines. Am J Hosp Palliat Care 2001;18:226-228.
- Orentlicher D. The Supreme Court and terminal sedation: rejecting assisted suicide, embracing euthanasia. Hastings Constitutional Law Quarterly 1997;24:947-968.
- Rousseau P. The ethical validity and clinical experience of palliative sedation. Mayo ClinProc

2000;75:1064-1069.

- Quill TE, Lo B, Brock DW. Palliative options of last resort: a comparison of voluntarily stopping eating and drinking, terminal sedation, physician-assisted suicide, and voluntary active euthanasia. *JAMA* 1997;278:2099-2104.
- Ventafridda V, Ripamonti C, De Conno F, et al. Symptom prevalence and control during cancer patients' last days of life. *J Palliat Care* 1990;6:7-11.
- Greene WR, Davis WH. Titrated intravenous barbiturates in the control of symptoms in patients with terminal cancer. *South Med J* 1991;84:332-337.
- Fainsinger R, Miller MJ, Bruera E, et al. Symptom control during the last week of life on a palliative care unit. *J Palliat Care* 1991;7:5-11.
- Gauthier CC. Active voluntary euthanasia, terminal sedation, and assisted suicide. *J Clin Ethics* 2001;12:43-50
- de Graeff A, Dean M. Palliative sedation therapy in the last weeks of life: a literature review and recommendations for standards. *J Palliat Med.* 2007 Feb;10(1):67-85.
- Legemaate J, Verkerk M, van Wijlick E, de Graeff A. Palliative sedation in the Netherlands: starting-points and contents of a national guideline. *Eur J Health Law.* 2007 Apr;14(1):61-73
- Gomes B, Cohen J, Deliens L, Higginson IJ. International trends in circumstances of death and dying. In Gott M, Ingleton C, editors. *Living with ageing and dying: palliative and end of life care for older people.* Oxford: Oxford University Press; 2011. pp. 3–18.
- Hughes-Hallett T, Craft A, Davies C, Mackay I, Nielsson T. Creating a fair and transparent funding system; the final report of the palliative care funding review. London; Palliative Care Funding Review; 2011.
- Seymour J, Witherspoon R, Gott M, Ross H, Payne S. *Dying in older age: end of life care.* Bristol: Policy Press; 2009.
- Rietjens JA, Hauser J, van der Heide A, Emanuel L. Having a difficult time leaving: experiences and attitudes of nurses with palliative sedation. *Palliat Med.* 2007 Oct;21(7):643-9

- Centeno C, Clark D, Lynch T, Rocafort J, Flores LA, Greenwood A, Brasch S, Prall D, Giordano A, de Lima L. EAPC Atlas of Palliative Care in Europe. Milan: IAHPC Press, 2007
- Khosla D, Patel FD, Sharma SC. Palliative care in India: Current progress and future needs. Indian journal of palliative care. 2012 Sep;18(3):149.
- Indian against Cancer. Cancer Statistics. Available from: <http://www.cancerindia.org.in/statistics>
- Jain V. Palliative care in India: Trials, tribulations, and future prospects. Journal of Mahatma Gandhi Institute of Medical Sciences. 2018 Jul 1;23(2):55.
- Mallath MK, Taylor DG, Badwe RA, Rath GK, Shanta V, Pramesh CS, et al. The growing burden of cancer in India: Epidemiology and social context. Lancet Oncol 2014;15:e205-12
- World Health Organization and World-Wide Palliative Care Alliance (WPCA); Global Atlas of Palliative Care at End of Life
- Sullivan R, Badwe RA, Rath GK, Pramesh CS, Shanta V, Digumarti R, et al. Cancer research in India: National priorities, global results. Lancet Oncol 2014;15:e213-22.
- Kumar S. Models of delivering palliative and end-of-life care in India. Curr Opin Support Palliat Care 2013;7:216-22

## Appendix A: List of Abbreviation

CAI: Computer Assisted Instruction

SPSS: Statistical package for social science

WWW: World Wide Web

ICU: Intensive Care Unit

ER: Emergency Room

WHO: World Health Organization

PCQN: Palliative Care Quiz for Nursing

FATCOD: Frommelt Attitude Towards Care of Dying Scale

## Appendix B: Xerox copy of IERC Approval





**INSTITUTIONAL ETHICAL COMMITTEE**  
**MAHATMA GANDHI MISSION'S DENTAL COLLEGE & HOSPITAL**

Junction of NH-4 and Sion Panvel Expressway,  
Sector-01, Kamothe, Navi Mumbai- 410 209  
Tel: 022- 27436604; Fax: 91-22-27433185; E-Mail:mgmdch@mghmmumbai.ac.in

MGM/DCH/IEC/ 029 / 2021

Date:- 14 / 6 /2021

To,  
Ms. Snel Gilbert Alwaris  
MSc Medical-Surgical Nursing  
Guide - Mrs. Josmy Abraham  
MGM New Bombay College of Nursing  
Kamothe, Navi Mumbai- 410209

**Reference:**

1. Your submission of study protocol  
Study Title: "effect of Computer Assisted Instruction on Knowledge and attitude regarding palliative care among undergraduate Nursing Students"

2. IEC-MGMDCH referenceno. MCM | DCH | IEC | 029 | 2021

Dear Ms. Snel Gilbert Alwaris

The IEC- MGMDCH has received and reviewed your submission

Following documents were reviewed in the meeting held on date 22/5/2021

1. Application to IERC MGMDCH dt. 19/4/2021
2. Summary of research protocol
3. Research protocol (Version 2 dt. 9/4/2021)
4. Amendments to research protocol (No 1 Dt. 31/3/2021)
5. Informed consent document (ICD) in English (Version 2 dt. 9/4/2021) ✓
6. ICD in Hindi language translated from English (Version 2 dt. 9/4/2021) ✓
7. ICD in Marathi language translated from English (Version 2 dt. 9/4/2021) ✓
8. Back translations of ICD from Hindi to English (Version 2 dt. 9/4/2021) ✓
9. Back translations of ICD from Marathi to English (Version 2 dt. 9/4/2021) ✓
10. Amendments to the ICD (Version ..... dt. .... /2021) NA
11. Case Record Form (CRF) / Study Questionnaire / Study Proforma ✓
12. Principal investigators Current Curriculum Vitae (signed and dated) ✓
13. Subject recruitment procedures: advertisement, letters to doctors, notices NA
14. Investigator Brochure (IB) – applicable for investigational new drugs (IND) NA
15. Ethics Committee clearance of other study centers (Total No.) NA
16. Insurance policy if any NA
17. Drugs Controller General (India) [DCG(I)] clearance if applicable NA
18. Investigator's undertaking to DCG(I) if applicable NA
19. Health Ministry Screening Committee (HMSC) approval if applicable NA
20. Bhabha Atomic Research Centre (BARC) approval if applicable NA
21. Genetic Engineering Advisory Committee (GEAC) approval if applicable NA
22. Director General of Foreign Trade (DGFT) approval if applicable NA
23. FDA marketing/manufacturing license for herbal drugs, if applicable NA
24. Other Documents (specify.....)

Page No.



**INSTITUTIONAL ETHICAL COMMITTEE**  
**MAHATMA GANDHI MISSION'S DENTAL COLLEGE & HOSPITAL**  
Junction of NH-4 and Sion Panvel Expressway,  
Sector-01, Kamothe, Navi Mumbai- 410 209  
Tel: 022- 27436604; Fax: 91-22-27433185; E-Mail:mgmdch@mgmmumbai.ac.in

MGM/DCH/IEC/ 029 / 2021

Date:- 14 / 6 /2021

The following members of the Ethics committee discussed the study documents and voted at the meeting:

Sr.	Name	Role and Responsibility
1.	Dr. Deepak Langade	Chairman, Scientific
2.	Dr. Srivalli Natarajan	Secretary, Scientific
3.	-	Scientific
4.	Adv. Dr. Karuna R. Malaviya	Scientific, Legal
5.	Dr. Shilpa Patel	Scientific, Woman
6.	Dr. Ravindranath VK	Scientific
7.	Dr. Ashvini Padhye	Scientific, Woman
8.	Dr. Jyoti Nadgere	Scientific, Woman
9.	-	Scientific
10.	Ms. Nithya Eldho Varghese	Lay person
11.	-	Social worker

DECISION

*Approved*

Page No 2



**INSTITUTIONAL ETHICAL COMMITTEE**  
**MAHATMA GANDHI MISSION'S DENTAL COLLEGE & HOSPITAL**

Junction of NH-4 and Sion Panvel Expressway,  
Sector-01, Kamothe, Navi Mumbai- 410 209  
Tel: 022- 27436604; Fax: 91-22-27433185; E-Mail:mgmdch@mgmmbai.ac.in

MGM/DCH/IEC/ 029 / 2021

Date:- 14 / 6 /2021

Based on the discussion of the submitted documents for the scientific and ethical review, we approve the research protocol to be conducted and its presented form subject to the following conditions:

1. Applicable and mandatory regulatory permissions to be obtained prior to commencement of the study i.e. registration at clinical trial registry of India.(www.ctri.nic.in)
2. The investigators and other participants should be adequately trained on the protocol and its related procedures, the Good Clinical Practices (GCP) guidelines prior to commencing the study.
3. Participating subjects should be adequately enlightened about the protocol during informed consent process and under insurance coverage in an event of any trial related injury/accident.
4. Participating subjects should not be put to additional financial burden related to the study protocol.

The validity of this approval is for two years from date of approval. Within this period, the Institutional Ethics Committee expects to be periodically informed about the following:

- The progress of the study
- Any Serious Adverse Event (SAE) occurring in the course of the study
- Any significant changes in the protocol/patient information/ informed consent
- Update on safety of the investigating product or procedure

To provide an abridge copy of the final report after completion of the study.

Thanking You,

Yours Sincerely

**Dr. Srivalli Natarajan**

Member Secretary

**Dr. Srivalli Natarajan**

Member Secretary

IERC MGMDCH

Kamothe, Navi Mumbai-410 209.

Page No.3

## Appendix C: List of experts for content & Tool Validation

Sr. No	Name of Validators	Designation
1.	Dr. R. Ponchitra	Vice Principal & Professor, MGM New Bombay College of Nursing, Navi Mumbai
2.	Dr. Rita Lakhani	Principal & Professor, DY Patil School of Nursing, Nerul, Navi Mumbai
3.	Dr. Padmaja Dhawale	Nursing Superintendent & Associate Professor, MGM New Bombay College of Nursing, Navi Mumbai
4.	Mrs. Vaishali Jadhav	Principal, Bharti Vidyapeeth College of Nursing, Kharghar, Navi Mumbai
5.	Mrs. Gargi Karadkar	Vice Principal, Bharti Vidyapeeth College of Nursing, Kharghar, Navi Mumbai
6.	Dr. Jyoti Chaudhari	Associate Professor, MGM New Bombay College of Nursing, Navi Mumbai
7.	Mrs. Preethi Mathew	Associate Professor, MGM New Bombay College of Nursing, Navi Mumbai
8.	Mrs. Vandana Kumbhar	Associate Professor, MGM New Bombay College of Nursing, Navi Mumbai
9.	Mrs. Ferganzia Jublison	Assistant Professor, MGM New Bombay College of Nursing, Navi Mumbai


10. Mrs. Anna Hima Thomas Assistant Professor, MGM New Bombay  
College of Nursing, Navi  
Mumbai
11. Mrs. Nisha Mane Assistant Professor, MGM New Bombay  
College of Nursing, Navi  
Mumbai
12. Mr. Muniyandi S. Associate Professor, MGM New  
Bombay College of Nursing, Navi Mumbai
13. Mrs. Sheetal Tike Tutor, Bharti Vidyapeeth College of  
Nursing, Kharghar, Navi Mumbai
14. Mrs. Sivakamasundari P. Assistant Professor, MGM New Bombay  
College of Nursing, Navi  
Mumbai
15. Mrs. Sarika Sukesh Nair Tutor cum Clinical Instructor, MGM New  
Bombay College of Nursing, Navi  
Mumbai

## Appendix D: Blue Print of the Tool

Objectives/	Knowledge	Comprehension	Application	Total	%
-------------	-----------	---------------	-------------	-------	---

Content					
Definition	Q.No.1			1	5
Principles	Q.No.2 Q.No.3	Q.No.4	Q.No.5	4	20
Models of Palliative Care	Q.No.6 Q.No.7	Q.No.8		3	15
Indication	Q.No.9	Q.No.10		2	10
Symptoms	Q.No.11 Q.No.12	Q.No.13 Q.No.14		4	20
Pain Assessment		Q.No.16	Q.No.15	2	10
Nurses Role			Q.No.17 Q.No.18	2	10
Ethical legal Aspects		Q.No.19		1	5
Psychological, Social, Spiritual needs			Q.No.20	1	5
<b>Total</b>	<b>8</b>	<b>7</b>	<b>5</b>	<b>20</b>	<b>100</b>
<b>%</b>	<b>40</b>	<b>35</b>	<b>25</b>		<b>100</b>

## Appendix E: Xerox Copy of Administrative Approval for Data Collection

  
**MGM INSTITUTE OF HEALTH SCIENCES**  
(Deemed to be University) Grade 'A' Accredited by NAAC  
**MGM NEW BOMBAY COLLEGE OF NURSING**  
5<sup>th</sup> Floor, MGM Educational Campus, Plot No. 1 & 2, Sector-I  
Kamothe, Navi Mumbai – 410 209

---

Ref No.: MGM /NBCON 14 /11/2021 Date: 16/02/2022

To  
The Principal  
Bharvi Vidyapeeth  
College of Nursing  
Navi Mumbai

**Subject: Permission for data collection.**

Dear Sir/Madam,

MGM New Bombay College of Nursing, Kamothe, a constituent unit of MGM Institute of Health Sciences, Navi Mumbai, offers undergraduate, post graduate and Ph.D. programme in Nursing.

As part of the partial fulfilment of curricular requirements, M. Sc. Nursing in critical care students have to conduct research. The Title of his/her research project has been approved by the institutional research committee as well as ethical review committee, MGM Institute of Health Sciences Navi Mumbai which is as mentioned below.

Problem statement

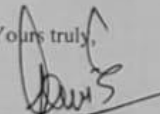
***"Effect of computer assisted instruction on knowledge and attitude regarding palliative care among undergraduate nursing students"***

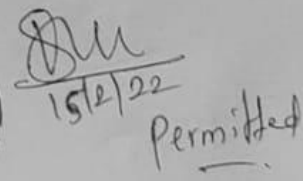

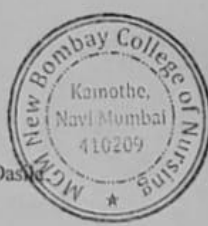
I would be much obliged, if you could grant permission for data collection from your institution during the period of 1 week (16/02/2022 - 22/02/2022)

The copy of proposal is enclosed herewith.

I assure you that the students will abide the rules and regulation of your esteemed institution.

Thanking you,

Yours truly,  
  
Dr. (Mrs.) Prabha K. Das  
Professor & Director



---

Tel. No.: 022- 27430141/ 0215/ 0213 | E-mail: [principal@mgmudn-nm.edu.in](mailto:principal@mgmudn-nm.edu.in) | Website: [www.mgmudn-nm.edu.in](http://www.mgmudn-nm.edu.in)

## Appendix F: Informed Consent



**MGM INSTITUTE OF HEALTH SCIENCES**

(Deemed University u/s 3 of UGC Act, 1956)

**Grade 'A' Accredited by NAAC**

**MGM NEW BOMBAY COLLEGE OF NURSING**

5<sup>th</sup> Floor, MGM Educational Campus, Plot No. 1 & 2, Sector-1 Kamothe, Navi Mumbai – 410 209.

### **PARTICIPANT INFORMED CONSENT FORM**

**Protocol Number: PG/IEC/01/2020-21**

**Study title:** Effect of Computer Assisted Instruction on Knowledge & Attitude regarding Palliative care among final year B.Sc. Nursing students.

Sr.No	Item	Tick the box
1.	I confirm that I have read and understood the information sheet dated - ----- For the above study and have had the opportunity to ask questions.	
2.	I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving reason without any my medical care or legal rights being affected	
3.	I understand that the study team member, Ethics committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to even if I withdraw from the trial.  I agree to this access. However, I understand that my identity will not be revealed, in any information released to third parties or published.	
4.	I agree not to restrict any use of any data or results that arise from this study provided such a use is only for scientific purpose(s)	
5.	I agree to take part in the above study	

S.No	Name	Signature/Thumb impression with date
1	Participant	
2	Legally accepted Representative	
3	Impartial witness	
4.	Principal investigator	Mr. Snel Alwaris

## Appendix G 1: Structured questionnaire to assess the knowledge regarding palliative care.

### Demographic data

#### Instructions:

- Various possible alternatives of each question are given in the questionnaire
- Select only one alternative, which is correct & tick mark ( ) an against it.
- Please do not leave any questions unanswered.
- Do not overwriting.

#### Demographic Data

1. Gender
  - a) Male
  - b) Female
2. Age in Years
  - a) 19-21
  - b) 22-24
3. Do you have previous knowledge about Palliative Care Nursing?
  - a. Yes
  - b. No

3.1 if yes, from where/whom

- i. Friends
- ii. Books
- iii. Social media
- iv. Observed in hospital
- v. Any other

4. Is Palliative Care previously taught in the class?

- a. Yes
- b. No

4.1 If yes, in which year?

- i. First Year
- ii. Second Year
- iii. Third Year
- iv. Fourth Year

## **Appendix G 2: Structured Questionnaire to assess the knowledge regarding palliative care.**

### **Instructions:**

- Various possible alternatives of each question are given in the questionnaire
- Select only one alternative, which is correct & tick mark ( ) against it.
- Please do not leave any questions unanswered.
- Do not overwriting.

**1. Palliative care is \_\_\_\_\_.**

- a. for the patient only, not the family
- b. best used for simple problems like colds and flus
- c. designed to cure diseases
- d. to decrease pain and suffering and provide comfort and support for people with serious illnesses.

**2. Hospice care is for \_\_\_\_\_.**

- a. Patients who are facing the end of their life, is a specialized part of palliative care.
- b. to decrease pain and suffering and provide comfort and support for people with serious illnesses.
- c. Patients who are recently diagnosed with cancer.
- d. Patient who are receiving chemotherapy and radiotherapy.

**3. Palliative care is appropriate only in situation where there is evidence of worsening of disease.**

- a. True
- b. False

a. Don't

know

**4. Which among this is NOT indication of Palliative care.**

- a. Multiple sclerosis
- b. Cancer
- c. Myocardial infarction
- d. Heart & Lung disease

**5. The greatest increase in survival during hospice has been associated with which of the following diseases?**

- a. Heart failure
- b. Breast cancer
- c. Colorectal cancer
- d. Chronic obstructive pulmonary disease

**6. Which of the following is the most reliable indicator of pain?**

- a. Patients' self-report
- b. Results of physical examination
- c. Results of functional assessment
- d. Results of multidimensional assessment

**7. Which of the following is NOT considered barrier to palliative care?**

- a. Family member creating obstacle
- b. Health professional creating obstacle
- c. Conflicts between ideal care and patient's wishes
- d. Reduce unnecessary hospital visits.

**8. Which of the following offers the best approaches for assessment of physical symptoms?**

- a. Asking open-ended questions
- b. Traditional systems approach
- c. Asking which symptom is least troublesome
- d. Systematic assessment of symptoms plus open-ended questions.

**9. General principles of diet in palliative care are**

- a. Avoid further loss of body weight
- b. Correct significant nutritional deficiency
- c. Reduce/ stop the related deterioration of quality of life of patients.
- d. All of the above

**10. The most widely used appetite enhancer for patients with life-limiting disease is**

- a. Ondansetron
- b. dexamethasone.
- c. megestrol acetate
- d. None of the above

**11. According to the World Health Organization (WHO) ladder, pain should be managed**

- a. with only nonopioids for Steps 1 and 2
- b. in a stepwise progression from Step 1 to Step 3
- c. in a manner according to the intensity of the pain
- d. with nonopioids given around the clock and opioids given on an as-needed basis

**12. Patient's fear to take opioids might be related to a belief that**

- a. the side effects of opioids cannot be managed.
- b. the increase of pain signifies that the disease is getting worse.

- c. if he or she takes strong drugs now, no drugs will be effective in the future.
- d. All of the above.

**13. These are the Adjuvant analgesics commonly used for cancer pain, EXCEPT**

- a. *Corticosteroids*
- b. *Antidepressants*
- c. *Antimetabolites*
- d. *Bisphosphonates*

**14. Which of the following is TRUE regarding the management of fatigue?**

- a. Aerobic exercise has been shown to relieve fatigue.
- b. Additional rest/sleep is an effective strategy for alleviating fatigue
- c. Fatigue should be aggressively treated in the last days or hours of life.
- d. Causal treatment should be provided rather than symptomatic treatment.

**15. Palliative sedation should**

- a. never be carried out.
- b. be initiated as soon as a patient requests it.
- c. be considered when the family asks to relieve the patient's suffering.
- d. be considered after consultation with a psychiatrist and pastoral services, if appropriate.

**16. Which of the following is FALSE regarding spiritual needs of patients at the end of life?**

- a. Spiritual care is well-defined.
- b. Spirituality is considered to be separate from religious faith.
- c. Spirituality has a strong protective effect against end-of-life distress.
- d. Greater spiritual well-being has been associated with decreased anxiety and depression among people with advanced disease?

**17. The most common contributor to sleep disturbances in patients at the end of life is**

- a. Dyspnoea
- b. Hot flashes
- c. Uncontrolled pain
- d. Nocturnal hypoxia

**18. Which among this is NOT ethical and legal issue at end-of-life care?**

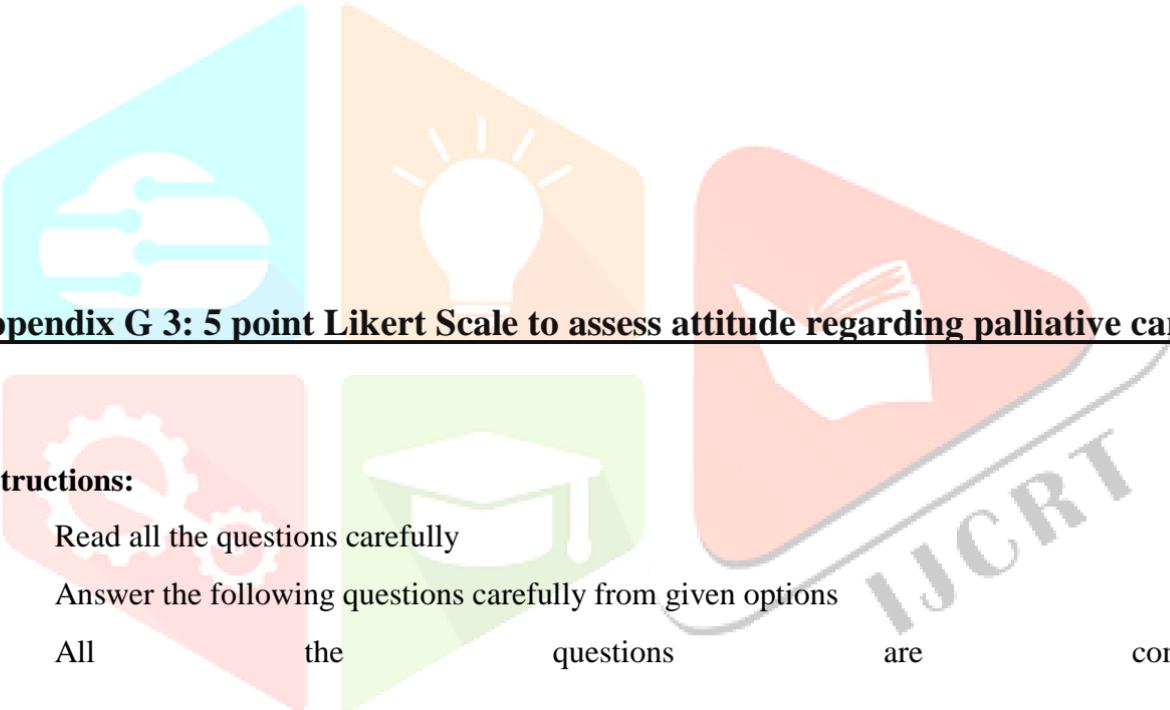
- a. Shared decision making
- b. Withdrawing life sustaining treatment
- c. DNR (Do Not Resuscitate)
- d. Diet

**19. Which of the following is TRUE regarding grief, mourning, and bereavement?**

- a. Grief counselling should begin when the patient is alive
- b. Mourning is composed of sequential stages that occur in order
- c. The physician's attendance at the patient's funeral would be inappropriate
- d. The healthcare team should extend bereavement services for no more than one month after the death of the patient.

**20. Which of the following is TRUE regarding end-of-life care for children?**

- a. The WHO ladder is not effective for pain management.
- b. Psychosocial issues are uncommon for family members and the child.
- c. The most common symptoms among children are similar to those among adults.
- d. The child should not be allowed to participate in discussions about the direction of care.



**Appendix G 3: 5 point Likert Scale to assess attitude regarding palliative care.**

**Instructions:**

- Read all the questions carefully
- Answer the following questions carefully from given options
- All the questions are compulsory

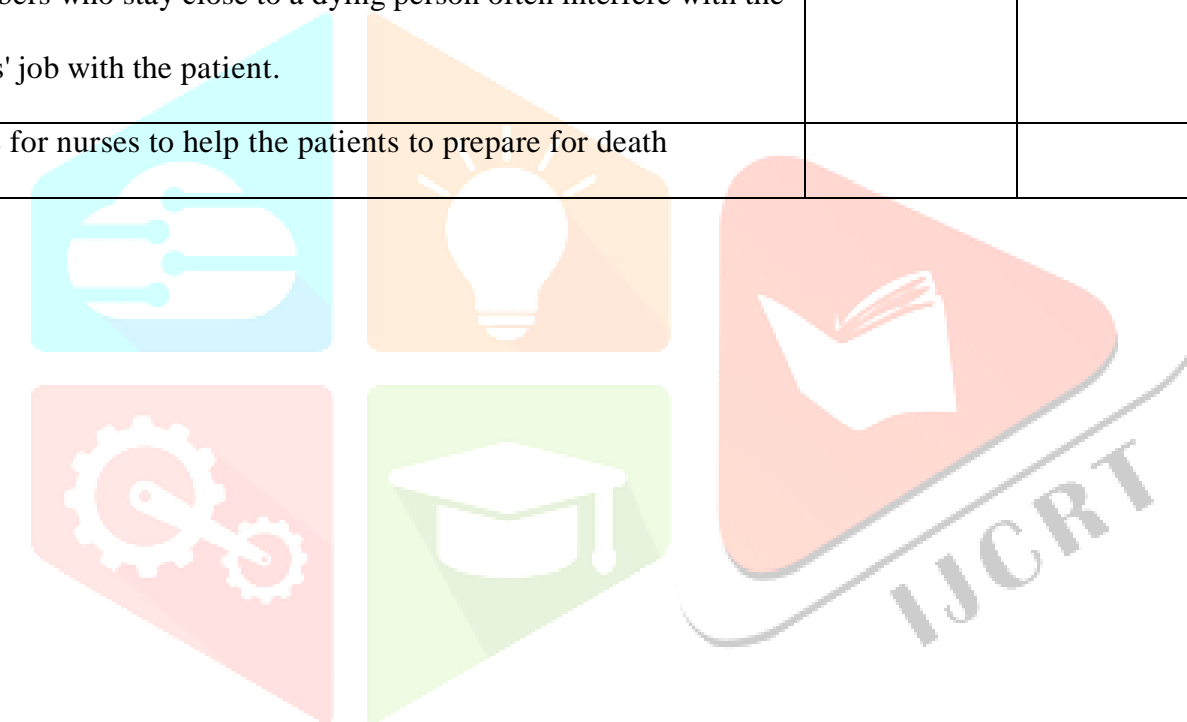


Sr. No.	Particulars	Strongly Agree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly disagree (5)
1.	Providing nursing care to dying person is a worthwhile learning experience.					
2.	Death is not the worst thing that can happen in persons life.					
3.	It would be uncomfortable talking about impending death with the dying person.					
4.	Nursing care for the patient's family should continue throughout the period of grief and bereavement.					
5.	I would like not to be assigned to care for a dying person					
6.	The nurse should not be the one to talk about death with the dying person.					
7.	The time required to give nursing care to a dying person would frustrate					

	me always.					
8.	I would be upset when patient I for gave up hope of getting better.					
9.	It is difficult to form a close relationship with the family of a dying person.					
10.	There are times when death is last hope in dying person.					
11.	When a patient asks, "Nurse am I dying?", I think it is best to change the subject to make patient cheerful.					
12.	The family should be involved in the physical care of the dying Person.					
13.	I would hope the person I'm caring for dies when I am not present.					
14.	I am afraid to become friend with a dying person.					
15.	I would feel like running away when the person actually dies.					
16.	Families need emotional support to accept the behavior changes of the dying person.					

17.	As a patient nears death, the nurse should withdraw from his/her involvement with the patient.					
18.	Families should be concerned about helping their dying member to live life peacefully and happily.					
19.	The dying person should not be allowed to make decisions about his/her physical care.					
20.	Families should maintain normal environment as possible for their dying member.					
21.	It is beneficial for the dying person to verbalize his/or feelings.					
22.	Nursing care should extend to the family of the dying person.					
23.	Nurses should permit dying persons to have flexible visiting schedules.					
24.	The dying person and his/her family should be the in-charge decision makers.					
25.	Addiction to pain relieving medication should not be a nursing concern when dealing with a dying person.					
26.	I would be uncomfortable if I entered the room of a terminally ill person					

	and found him/her crying.					
27.	Dying persons should be given honest answers about their condition.					
28.	Educating families about death and dying is not a nursing responsibility.					
29.	Family members who stay close to a dying person often interfere with the professionals' job with the patient.					
30.	It is possible for nurses to help the patients to prepare for death					



## Appendix H1: Lesson Plan on Palliative Care

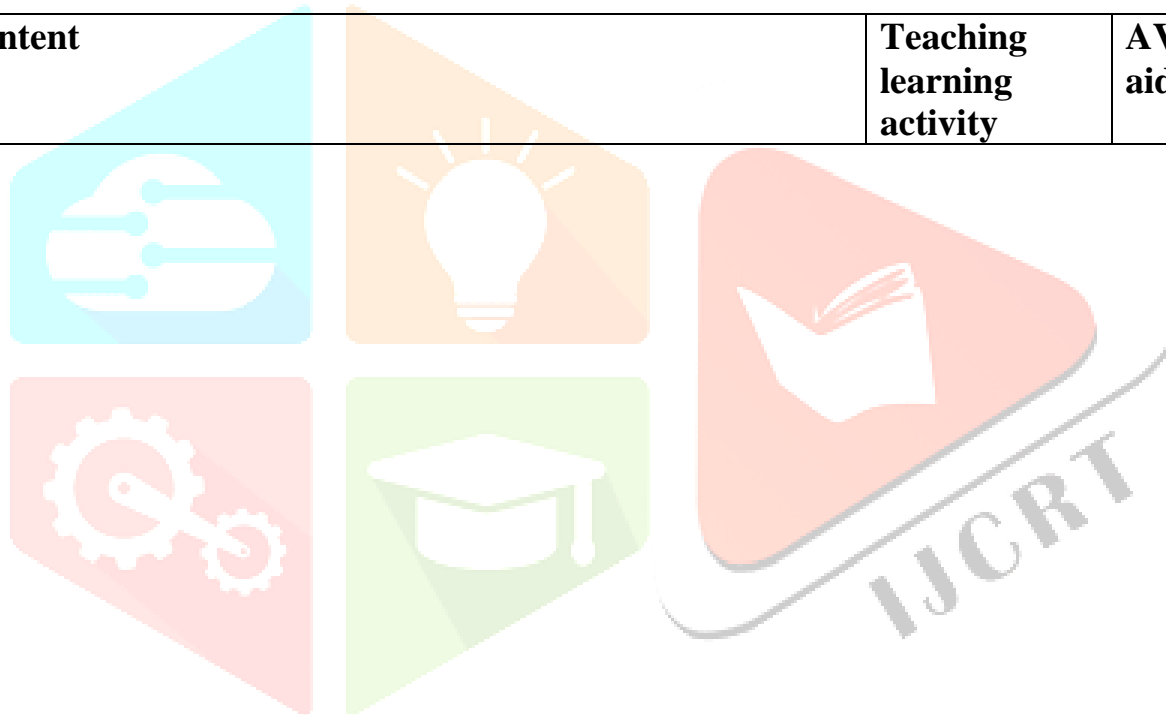
**General Objective-** At the end of the class students will be able to acquire knowledge on meaning of palliative care, indications, principles, medical management, nursing management, general care of patient, ethical & legal issues, loss & grief, psychological-social-spiritual needs of patient.

**Specific Objectives-** At the end of the class students will;

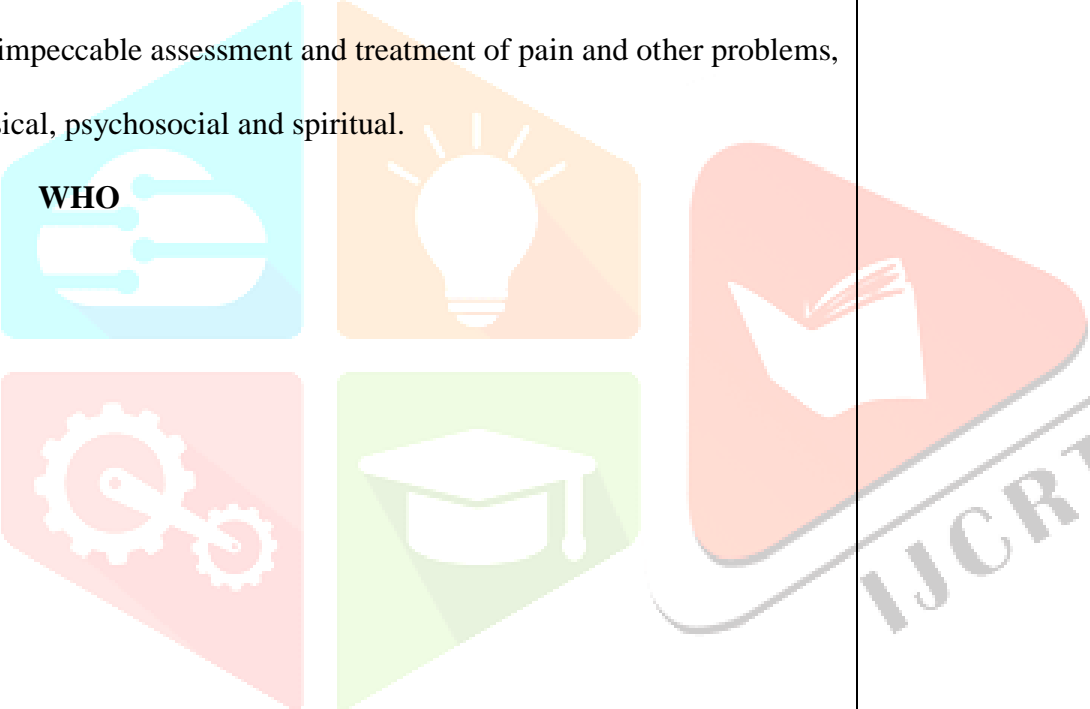
- define palliative care.
- explain the principles of palliative care.
- Illustrate the model of palliative care.
- enumerate indications of palliative care.
- explain the symptoms in palliative care.
- classify the pain according to pain assessment scales.
- discuss role of nurse in palliative care.
- discuss role of nurse in ethical and legal issues regarding palliative care.

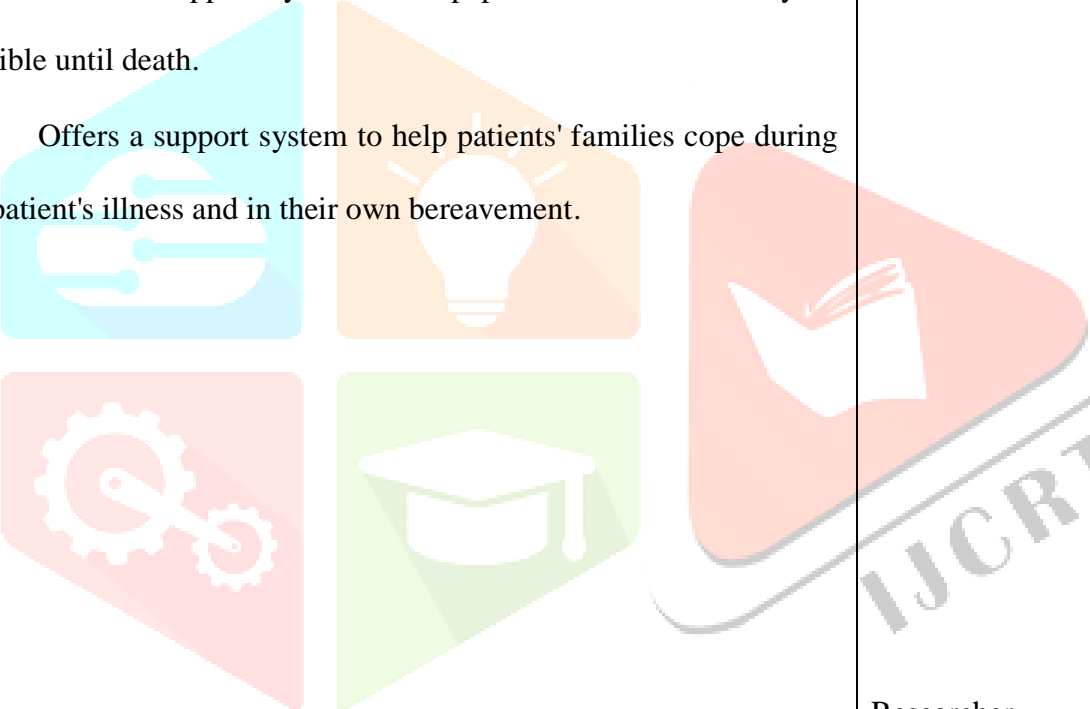
- communicate therapeutically psychological, social, & spiritual needs of patient & families

Time	Specific Objectives	Content	Teaching learning activity	AV aids	Evaluation
------	---------------------	---------	----------------------------	---------	------------



2 mins	Introduction	<p>Greetings of the day, I, Mr. Snel Alwaris, M.Sc. Nursing student of MGMNBCON. Today we are going to discuss on topic – palliative care.</p> <p>Palliative care is one of the most integral part of health care system which provides a support to help patient to alleviate sufferings &amp; live life peacefully till the last breath and help families in mitigating anxiety. Palliative nursing is both an art and a science, which when practised together allow the nurse to provide truly holistic, empathetic palliative care. Palliative care can be taught to understand the neglected area of concern and can enhance the knowledge of student nurses to be competent while providing the care to the needy.</p>			
3 mins	define palliative	<b>Definition</b>	Researcher defines	PPT sharing	What is the meaning of

	care.	<p>The World Health Organization (WHO) defines Palliative Care as an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.</p> <p>- <b>WHO</b></p> 	palliative care.	definitio n.	palliative care?
5 Mins	explain the principles of palliative	<p><b>Principles of Palliative Care</b></p> <ul style="list-style-type: none"> <li>• Affirms life and regards dying as a normal process</li> </ul>	Researcher explains the principles of	PPT	What are the principles of palliative

	care.	<ul style="list-style-type: none"> <li>Neither hastens nor postpones death</li> <li>Provides relief from pain and other distressing symptoms</li> <li>Integrates the psychological and spiritual aspects of care.</li> <li>Offers a support system to help patients live as actively as possible until death.</li> <li>Offers a support system to help patients' families cope during the patient's illness and in their own bereavement.</li> </ul>	palliative care.		care?
5 Mins	Illustrate the model of palliative care	 <p><b>Model of Palliative Care</b></p>	Researcher explains the model of palliative care.	PPT	How does model of palliative care is

		<p>Diagnosis of life-threatening or debilitating illness or injury</p> <p>Death</p> <p>Disease-modifying treatment</p> <p>Palliative care</p> <p>Hospice care</p> <p>Bereavement support</p> <p>Terminal phase of illness</p> <p>Disease progression</p> <ul style="list-style-type: none"> <li>❖ <b>Home based Palliative care</b></li> <li>❖ <b>Hospital based palliative care</b></li> <li>❖ <b>Hospice</b></li> <li>❖ <b>Respite care center</b></li> <li>• Provides relief from pain and other distressing symptoms.</li> <li>• Will enhance quality of life and may also positively influence the course of illness.</li> <li>• Is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy.</li> </ul>			functioned.
--	--	--	--	--	-------------

5 mins.	enumerate indications of palliative care.	<ul style="list-style-type: none"> <li>Includes those investigations needed to better understand and manage distressing clinical complications.</li> <li>Integrates the psychological and spiritual aspects of patient care.</li> <li>Offers a support system to help patients live as actively as possible until death.</li> <li>Affirms life and regards dying as a normal process</li> <li>Intends neither to hasten or postpone death.</li> <li>Offers a support system to help the family cope during the patient's illness and in their own bereavement.</li> </ul> <p><b>Indications of palliative care.</b></p> <p><b>Non-Cancerous</b></p> <ul style="list-style-type: none"> <li>Congestive heart failure</li> </ul>	Researcher explains the indications for palliative care.	PPT showing indication.	What are the indications for palliative care?
---------	---	--	--	-------------------------	---

		<ul style="list-style-type: none"> <li>• Chronic obstructive pulmonary disease</li> <li>• Dementia</li> <li>• Neurological conditions</li> <li>• Huntington's disease</li> <li>• Motor neurone disease</li> <li>• Multiple sclerosis</li> <li>• Parkinson's disease</li> <li>• End stage renal disease</li> <li>• Cancer</li> <li>• Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS)</li> <li>• Cirrhosis / liver failure</li> <li>• Chronic phase of stroke / coma.</li> </ul> <p><b>Cancerous</b></p> <ul style="list-style-type: none"> <li>• Bladder cancer</li> <li>• Breast cancer</li> <li>• Colon and rectal cancer</li> <li>• Cervical cancer</li> <li>• Endometrial cancer</li> </ul>			
--	--	---	--	--	--

5 Mins.	explain the symptoms in palliative care.	<ul style="list-style-type: none"> <li>• Esophageal cancer</li> <li>• Gall bladder cancer</li> <li>• Kidney cancer</li> <li>• Leukemia</li> <li>• Liver cancer</li> <li>• Lung Cancer</li> <li>• Melanoma</li> <li>• Testicular cancer</li> <li>• Pancreatic cancer</li> <li>• Prostate cancer</li> <li>• Thyroid cancer</li> </ul> <p><b>Symptoms in Palliative Care Patients</b></p> <ul style="list-style-type: none"> <li>• Pain <ul style="list-style-type: none"> <li>○ Mild to moderate</li> <li>○ Moderate to severe</li> <li>○ Bone pain</li> <li>○ Neuropathic pain</li> <li>○ Visceral</li> </ul> </li> <li>• Nausea- Vomiting – Anorexia</li> </ul>	Researcher explains symptoms in palliative care.	PPT showing symptom s.	What are the key symptoms in palliative care patients.
---------	--	---	--	------------------------	--

- Diarrhea
- Constipation
- Dyspnea
- Anxiety
- Delirium

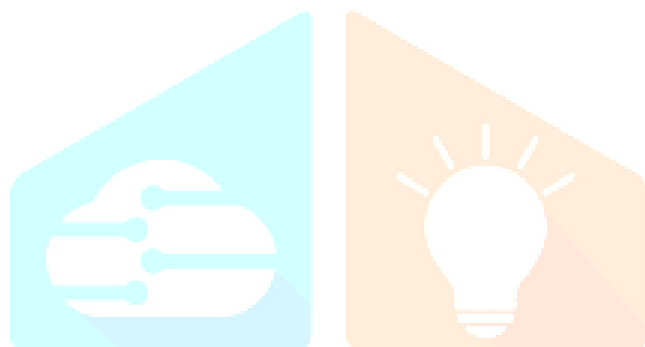
### **Pain management**

Analgesics are the mainstay of cancer pain management. Opioids are the main analgesics used in pain relief. WHO has proposed that pain intensity rather than its aetiology (cause) should be the prime consideration in the selection of analgesic. It has advocated the Step ladder approach to pain relief.

### **Non-opioids analgesics**

Drug	Typical starting dose
Acetaminophen	650mg 4hrly.
Ibuprofen	200-800mg 6hrly
Diclofenac Sodium	50-75mg 8-12hrly
Naproxen	250-750mg 12hrly
Piroxicam	10-20mg daily

Ketorolac	10 mg qid
-----------	-----------

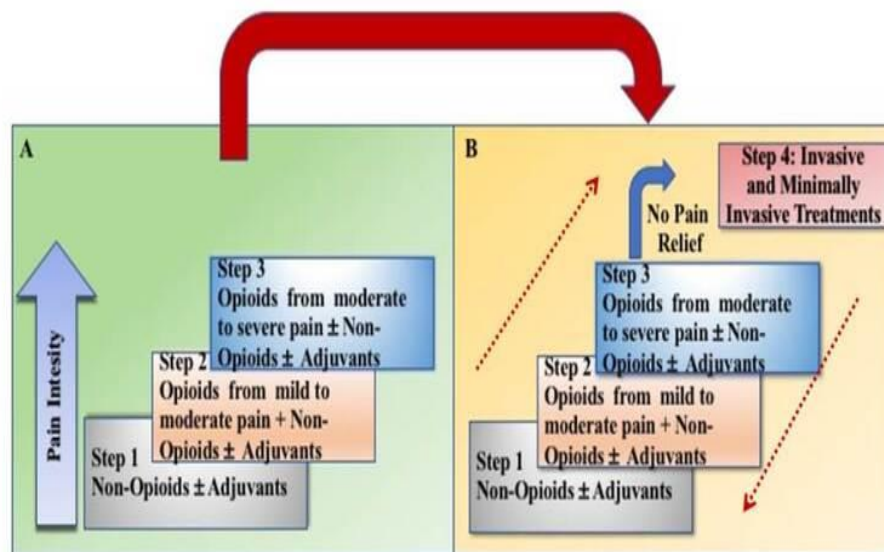


#### Commonly used opioids for cancer relief:

Step II Weak Opioids (Oral)	Usual starting dose
Codeine phosphate	10 – 15 mg 4hrly
Tramadol hydrochloride	50mg 6hrly
Dextropropoxyphene (with paracetamol)	32.5 – 65 mg 12 hrly to 6 hrly
Step III Strong Opioids (Oral)	
Morphine Sulphate (oral)	5 – 10 mg 4hrly 30 – 60 mg 12hrly (sustained release)

**Adjuvant drugs**

Drug	Useful in
Corticosteroids	Pain due to oedema / raised intracranial pressure
Antidepressants	Pain due to damage to nervous system
Anticonvulsants	Pain due to damage to nervous system
Anxiolytic	Where anxiety complicates pain
Muscle relaxants	Pain due to muscle cramps



Transition from the original WHO three-step analgesic ladder (A) to the revised WHO fourth-step form (B). The additional step 4 is an “interventional” step and includes invasive and minimally invasive techniques. This updated WHO ladder provides a bidirectional approach.

5 Mins	classify the pain according to pain assessment scales.	<p><b>Pain Assessment</b></p> <p><b>Pain can be assessed using the PQRST characteristics</b></p> <p><b>P-</b> Provocative factors</p> <p><b>Q-</b> Quality</p> <p><b>R -</b> Radiation</p> <p><b>S-</b> Severity</p> <p><b>T-</b> Triggering factors</p> <p><b>Various scales for Pain Assessment:</b></p> <ul style="list-style-type: none"> <li>• Descriptive scale</li> <li>• Numeric scale</li> <li>• Visual analogue scale</li> <li>• Percentage scale</li> <li>• Coin scale</li> <li>• Face scale</li> </ul> <p><b><u>Nurses Role in Palliative Care.</u></b></p>	Researcher explains the pain assessment scales.	PPT showing various pain assessment scales.	Which scale are used for pain assessment?
-----------	--	---	---	---	---

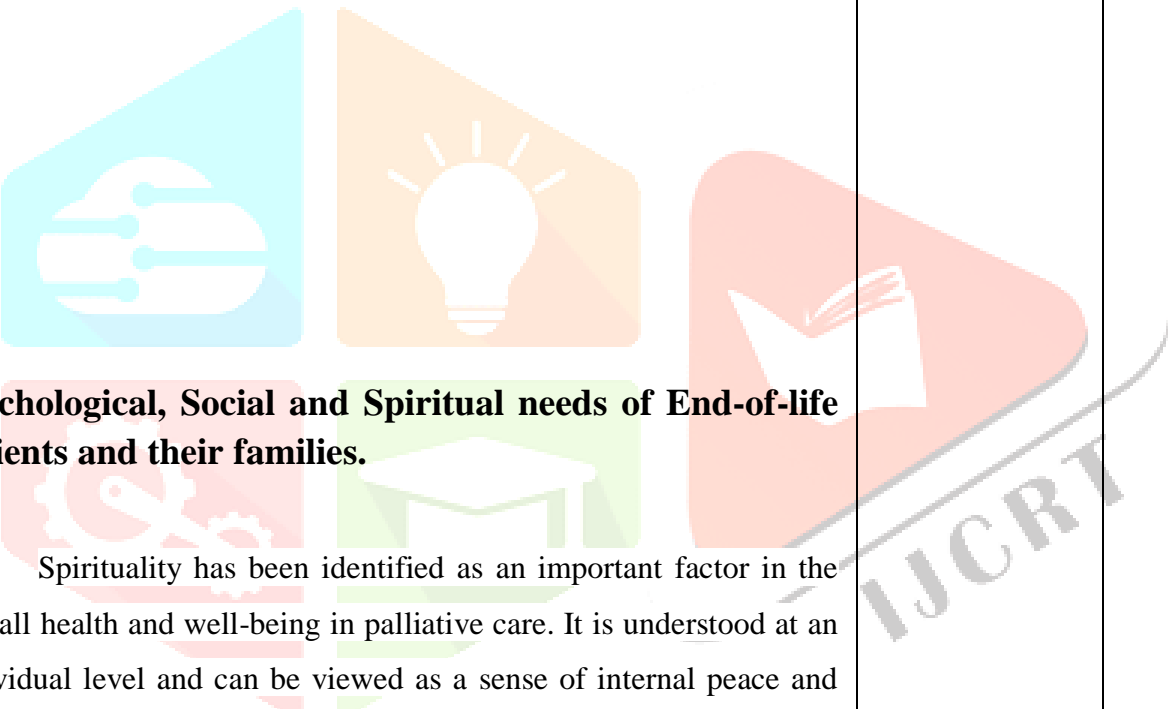
7 mins.	discuss role of nurse in palliative care.	<p><b>Palliative Nursing</b></p> <ul style="list-style-type: none"> <li>Requires an extension of basic nursing skills.</li> <li>Requires individualised care planning.</li> <li>Is based on the understanding that the patient is going through the most difficult time in life.</li> <li>Works with the patient's family and friends.</li> </ul> <p>The role of the nurse is to create and implement a care plan for the patient and family based on:</p> <ul style="list-style-type: none"> <li>Observation of the patient.</li> <li>Assessment of the patient's needs.</li> <li>Evaluation of the results of interventions.</li> <li>Regular reassessment of the situations and modifications to the plan.</li> </ul> <p><b>General care of the patient</b></p> <p><b>Nutrition</b></p> <p>Care Includes-</p>	Researcher explains the role of nurse in palliative care.	PPT showing role of nurse in palliative care.	What are the roles of nurse in palliative care?
---------	---	--	---	---	---

		<ul style="list-style-type: none"> <li>• Ensuring intake of fluids, and dietary fibre</li> <li>• Eating as much as the patient wants and as frequently as he / she wants</li> <li>• Nutritionally complete foods and dietary supplements as needed</li> <li>• Changing food consistency as needed</li> <li>• Nasogastric feeding when patient is unable to accept oral feeding</li> <li>• Prevention and management of oral thrush, nausea, constipation</li> </ul> <p><b>Personal Hygiene</b></p> <p><b>Oral Hygiene</b></p> <ul style="list-style-type: none"> <li>• Promote brushing, using a soft toothbrush and rinsing mouth every 12 hours.</li> <li>• Ensure proper fit of dentures, remove dentures at night</li> <li>• Provide mouthwash</li> <li>• Treat oral thrush with nystatin / fluconazole</li> <li>• If medication is causing dry mouth – review drugs, provide ice chips and chewing gums to promote salivation</li> </ul> <p><b>Skin care</b></p> <ul style="list-style-type: none"> <li>• Wash body daily – bath/shower, sponge bath; shave</li> </ul>			
--	--	---	--	--	--


		<p>daily; wash hair as often as feasible.</p> <ul style="list-style-type: none"> <li>• Ensure cleanliness of nails and mouth.</li> <li>• Provide clean clothing and bed linen.</li> <li>• Assess skin integrity – if pressure sores seem likely, change position frequently. Pad bony prominence, avoid friction and shearing forces.</li> <li>• Pressure sores – encourage healing by proper antiseptic dressing, antibiotics, removal of exudates and necrotic tissue, adequate nutrition.</li> </ul> <p><b>Spiritual Care</b></p> <p>Spirituality is our effort to find answers for life's fundamental mysteries, of which death is the most painful one.</p> <p><b>Life style habits</b></p> <ul style="list-style-type: none"> <li>• Encourage patients to lead a normal life as far as possible.</li> <li>• Facilitate their indulgence in activities they used to enjoy before the illness, as far as possible.</li> <li>• Help patients feel they are still wanted and useful in the family – encourage the family to involve the patient in domestic affairs and decision making.</li> <li>• Provide privacy and opportunity for the patient to spend time with life partner – sexual needs of the patient are usually neglected and may cause considerable suffering.</li> </ul> <p><b><u>Ethical and legal issues in palliative Care</u></b></p>			
--	--	---	--	--	--

6	discuss role of nurse in ethical and legal issues regarding palliative care.	<ul style="list-style-type: none"> <li>▪ <b>Autonomy:</b> is an expression of informed choices and preferences or consent to whatever we do or is done to as by others. It acknowledges the patient's right to know the diagnosis, to know the details of the treatment offered to him /her, and the right to refuse treatment.</li> <li>- Ability of the person to choose and act for ones self free of controlling influences.</li> <li>- Ability to make decisions based on our personal values and pertinent information.</li> <li>▪ <b>Beneficence</b> means that whatever one does to the patient should be for the good of the patient.</li> <li>- Acting in best interest of the patient.</li> <li>▪ <b>Non maleficence</b> means one should not do any harm to the patient while caring for or treating the patient.</li> <li>- Make no knowing act or decision, or lack of sharing information which will cause direct harm to the patient. ( Not sharing treatment options which you disagree with, but which are beneficial.)</li> <li>▪ <b>Justice</b> is the principle of fare use of the available resources. The resources are limited and the demands or high. It concerns with balancing individual needs with those of society.</li> <li>- Consider individual decision in context of the needs of the greater</li> </ul>	Researcher	PPT	What are the ethical and legal issues regarding palliative care?
---	--	--	------------	-----	--

		<p>society.</p> <ul style="list-style-type: none"> <li>▪ <b>Duty to alleviate suffering:</b> Beneficence is too often considered only in the context of disease and cure. This in not right the physician has an obvious duty to alleviate suffering.</li> <li>▪ <b>Respect:</b> every human being needs to be treated with respect and courtesy and their dignity should be preserved.</li> <li>▪ <b>Confidentiality:</b> we have the duty to preserve the persons confidentiality and do not have the rights to discuss matters related to his disease or psychological/social/spiritual issues with anyone other than the members of the treating team. In the context of todays' world of information- sharing and computerization, confidentiality can be easily breached. Respect for confidentiality requires our constant vigilance.</li> <li>▪ <b>Human Rights:</b> it is important for health care personnel to understand current concepts of human rights- the right to be respected, the right for full disclosure of health information, the right to access to pain relief and the right to life and death with dignity.</li> <li>▪ <b>Euthanasia</b> The Greek word 'euthanasia' simply means a gentle and easy death. But now the word is used to denote the act of international killing of the patient when the suffering of the patient</li> </ul>			
--	--	--	--	--	--

6 Mins.	communicate therapeutically	<p>could not be relieved and the death seems to be a benefit for the patient.</p>  <p><b>Psychological, Social and Spiritual needs of End-of-life patients and their families.</b></p> <ul style="list-style-type: none"> <li>• Spirituality has been identified as an important factor in the overall health and well-being in palliative care. It is understood at an individual level and can be viewed as a sense of internal peace and search of a purpose and belongingness to the sacred.</li> <li>• Psychological and spiritual distress are common in end-of-life patients, and they often trigger thoughts of an accelerated death when pain and physical symptoms have been treated, as patients may</li> </ul>	Researcher explains therapeutic	PPT	What are the strategies to
------------	--------------------------------	---	---------------------------------------	-----	-------------------------------

	<p>y psychologica l, social, &amp; spiritual needs of patient &amp; families.</p>	<p>become demoralized and hopeless This is a wide challenge for the patient, family members and healthcare team, who try to find meaning for this journey and where spirituality appears to be one of the ways to cope with this distressing experience.</p> <ul style="list-style-type: none"> <li>In palliative care, nurses are essential in providing support and counsel for end-of-life patients, their family member and other healthcare providers. By incorporating a spiritual component, the nurses' gains value insight about the patient and helps to fulfil the duty of responsibly caring for the 'whole' person, and by allowing the person to indicate his or her spiritual issues and needs, their dignity, right for self-determination and autonomy are being respected.</li> </ul> <p><b>Protocol for Breaking bad news</b></p> <p>The six steps <b>SPIKES</b> protocol or <b>ABCDE</b> model and <b>BREAKS</b> model seldom offer any chance to miss an issue, though it cannot be followed at all instances.</p> <p><b>SPIKES</b></p> <p>S – Setting up interview P – Assessing Patients perception</p>	<p>communication related to psychological, social, &amp; spiritual needs of the patient.</p>		<p>communicate therapeutically and attend the needs to patients?</p>
--	---	--	--	--	--

		<p>I – Obtaining the patients invitation  K – Giving Knowledge and information to patient  E – Addressing the patients’ emotions with empathetic response  S – Strategy and summary.</p> <p><b>BREAKS</b></p> <p>B – Background  R – Rapport  E – Explore  A – Announce  K – Kindling  S – Summarize</p> 			
--	--	--	--	--	--

**Conclusion:**

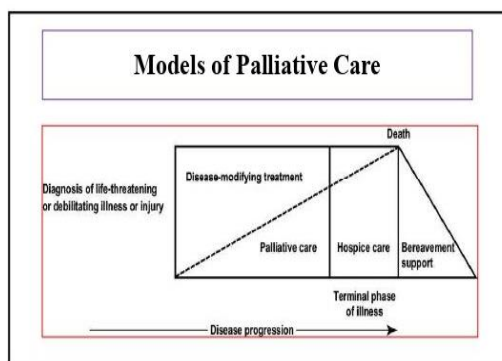
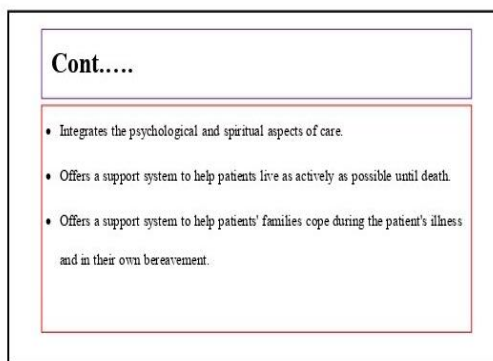
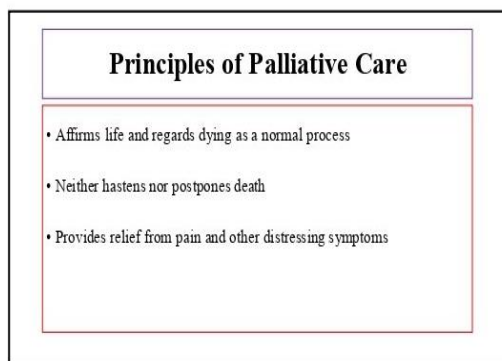
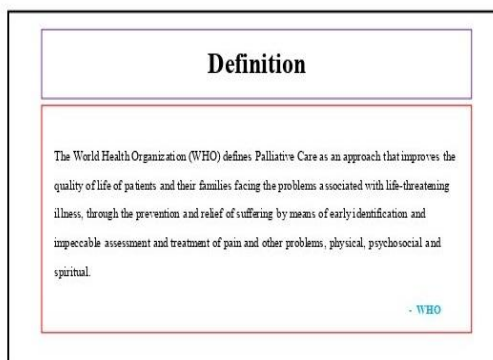
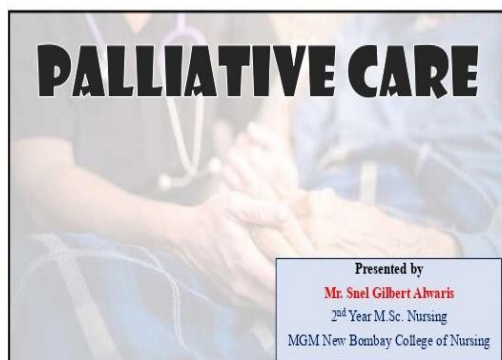
Palliative care is important aspect in assisting terminally ill individual, The role of palliative care at the end of life is to relieve the suffering of patients and their families by the comprehensive assessment and treatment of physical, psycho-social, and spiritual symptoms patients experience.

Nurses play an important role in relieving pain and managing symptoms higher quality of life while still pursuing curative measures.

Skillful nursing care and positive attitude can bring changes in palliative care in terms of nursing and holistic aspects.



## Annexure H2: Computer Assisted Instruction ( Power Point Slides)



**Cont....**

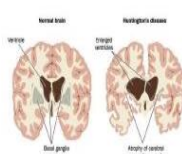
- Provides relief from pain and other distressing symptoms.
- Will enhance quality of life and may also positively influence the course of illness.
- Is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy.
- Includes those investigations needed to better understand and manage distressing clinical complications

**Cont..**

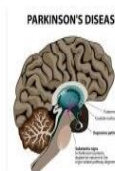
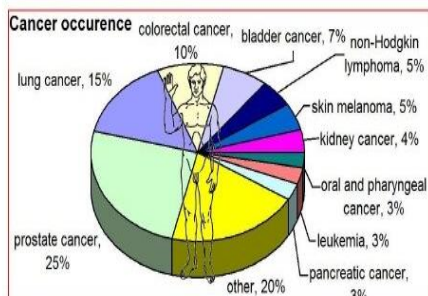
- Integrates the psychological and spiritual aspects of patient care.
- Offers a support system to help patients live as actively as possible until death.
- Affirms life and regards dying as a normal process.
- Intends neither to hasten or postpone death.
- Offers a support system to help the family cope during the patient's illness and in their own bereavement.

**Indications of palliative care****Non-Cancerous**

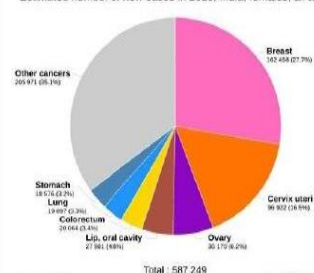
- Congestive heart failure
- Chronic obstructive pulmonary disease
- Dementia
- Neurological conditions
- Huntington's disease
- Motor neurone disease

**Cont..**

- Multiple sclerosis
- Parkinson's disease
- End stage renal disease
- Cancer
- Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS)
- Cirrhosis / liver failure
- Chronic phase of stroke / coma.

**Cont....****Cont..**

Estimated number of new cases in 2018, India, females, all ages



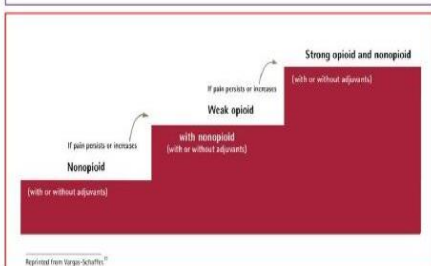
### Symptoms in Palliative Care Patients

- Pain
- Nausea- Vomiting – Anorexia
- Diarrhea
- Constipation
- Dyspnea
- Anxiety
- Delirium

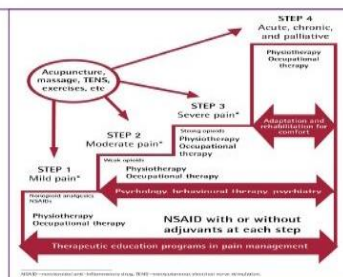
### Pain Management

Analgesics are the main stay of cancer pain management. Opioids are the main analgesics used in pain relief. WHO has proposed that pain intensity rather than its aetiology (cause) should be the prime consideration in the selection of analgesic. It has advocated the Step ladder approach to pain relief.

### Pain Management ladder



### Pain Management ladder



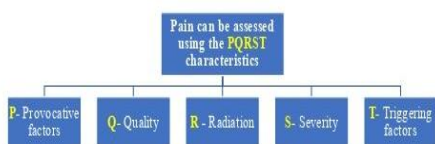
### Analgesics

Drug	Typical starting dose	Step II Weak Opioids (Oral)	Usual starting dose
Acetaminophen	650mg 4hrly	Codena phosphate	10-15 mg 4hrly
Ibuprofen	200-400mg 4hrly	Tiromol hydrochloride	50mg 4hrly
Diclofenac Sodium	50-75mg 8-12hrly	Dextropropoxyphene (with paracetamol)	32.5-65 mg 12hrly to 6 hrly
Naproxen	250-750mg 12hrly	Step III Strong Opioids (Oral)	
Proxam	10-20mg 4hrly	Morphine Sulphate (oral)	5-10 mg 4hrly 30-60 mg 12hrly (transdermal release)
Ketorolac	10 mg qid		

### Adjuvant drugs

Drug	Useful in
Corticosteroids <i>Ex: Dexamethasone</i> <i>Ex: Methylprednisolone</i>	Pain due to oedema / raised intracranial pressure
Antidepressants <i>Ex: Amitriptyline</i>	Pain due to damage to nervous system
Anticonvulsants <i>Ex: Gabapentin</i>	Pain due to damage to nervous system
Anxiolytic <i>Ex: Lorazepam</i> <i>Ex: Diazepam</i>	Where anxiety complicates pain
Muscle relaxants <i>Ex: Carbamazepine</i>	Pain due to muscle cramps

## Pain Assessment



## Various scales for Pain Assessment:

- Numeric scale
- Visual analogue scale (Wong- Baker)
- **FLACC Scale** ( Face, Legs, Activity, Cry, Consolability)
- **CRIS Scale** ( Crying, Required O<sub>2</sub>, Increased Vital Sign, Expression, Sleepless)
- Colour analogue scale



## Nurses Role in Palliative Care

- Requires an extension of basic nursing skills.
- Requires individualised care planning.
- Is based on the understanding that the patient is going through the most difficult time in life.
- Works with the patient's family and friends

The role of the nurse is to create and implement a care plan for the patient and family based on:

- Observation of the patient.
- Assessment of the patient's needs.
- Evaluation of the results of interventions.
- Regular reassessment of the situations and modifications to the plan.

## General care of the patient

### Nutrition

- Ensuring intake of fluids, and dietary fibre
- Eating as much as the patient wants and as frequently as he / she wants
- Nutritionally complete foods and dietary supplements as needed
- Changing food consistency as needed
- Nasogastric feeding when patient is unable to accept oral feeding
- Prevention and management of oral thrush, nausea, constipation



## Personal Hygiene

### Oral Hygiene

- Promote brushing using a soft toothbrush and rinsing mouth every 12 hours.
- Ensure proper fit of dentures, remove dentures at night
- Provide mouthwash
- Treat oral thrush with nystatin / fluconazole
- If medication is causing dry mouth-review drugs, provide ice chips and chewing gums to promote salivation



### Skin care

- Wash body daily – bath/shower, sponge bath; shave daily; wash hair as often as feasible.
- Ensure cleanliness of nails and mouth.
- Provide clean clothing and bed linen.
- Assess skin integrity – if pressure sores seem likely, change position frequently. Pad bony prominence, avoid friction and shearing forces.
- Pressure sores – encourage healing by proper antiseptic dressing, antibiotics, removal of exudates and necrotic tissue, adequate nutrition

### Spiritual Care

Spirituality is our effort to find answers for life's fundamental mysteries, of which death is the most painful one.

#### Life style habits

- Encourage patients to lead a normal life as far as possible.
- Facilitate their indulgence in activities they used to enjoy before the illness, as far as possible.
- Help patients feel they are still wanted and useful in the family – encourage the family to involve the patient in domestic affairs and decision making.
- Provide privacy and opportunity for the patient to spend time with life partner – sexual needs of the patient are usually neglected and may cause considerable suffering.

### Ethical and legal issues in palliative Care



### Psychological, Social and Spiritual needs of End-of-life patients and their families

- Spirituality has been identified as an important factor in the overall health and well-being in palliative care. It is understood at an individual level and can be viewed as a sense of internal peace and search of a purpose and belongingness to the sacred.
- In palliative care, nurses are essential in providing support and counsel for end-of-life patients, their family member and other healthcare providers.

### Cont....

- By incorporating a spiritual component, the nurses' gains value insight about the patient and helps to fulfil the duty of responsibly caring for the 'whole' person, and by allowing the person to indicate his or her spiritual issues and needs, their dignity, right for self-determination and autonomy are being respected.



**Appendix H5 : Answer Key**

Question Number	Correct Answer	Score Key
1	D	1
2	A	1
3	B	1
4	C	1
5	A	1
6	A	1
7	D	1
8	A	1
9	D	1
10	C	1
11	B	1
12	D	1
13	C	1
14	B	1
15	D	1
16	B	1
17	C	1
18	D	1
19	A	1
20	D	1
<b>Total Score</b>		<b>20</b>