

Effectiveness of Structured Teaching Programme on Knowledge Regarding Artificial Nutrition for Terminally Ill Cancer Patients

Sharun NV

Author Affiliation: Tutor, College of Nursing, All India Institute of Medical Sciences, Tatibandh, Raipur, Chhattisgarh 492099, India.

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Abstract

Background: Artificial nutrition for terminally ill patients especially cancer patients, often are made in highly charged situations in which the decision-makers are concomitantly trying to cope with multiple losses and grief. Apart from routine teaching, A structured teaching program might be necessary and might be most effective for third year BSc Nursing students to make them understand the multi dimensional aspects of the situation. *Research Hypothesis:* There is a significant difference in the level of knowledge regarding artificial nutrition for terminally ill cancer patients among third year B Sc Nursing students before and after structured teaching program. *Methodology:* Research approach adopted for the study was evaluative approach. Research design was pre-experimental (one group pre-test post-test). The study was conducted at Vidya Kirana Institute of Nursing Sciences with 50 third year B. Sc(N) students as participants. Non probability convenient sampling technique was used to select the samples. The instrument developed and used for data collection was structured questionnaire. *Results:* 1. There was significance difference between Pre-test (46%) and Post-test (82%) knowledge Score 2. There was positive correlation between the pre-test and post-test level of knowledge i.e. 0.27. 3. There was no association between the pre-test levels of knowledge and demographic variables except age. *Conclusion:* The study concludes that the STP (Structured Teaching Program) was effective in enhancing the levels of knowledge of third year B.Sc. Nursing students regarding artificial nutrition for terminally ill cancer patients.

Keywords: Artificial nutrition; Terminally ill; STP(structured teaching program).

Introduction

“Let food be your medicine and let medicine be your food.” Hippocrates

Provision of food and fluids is a fundamental care giving activity. From birth to death, eating

and drinking are important opportunities for human contact and nurturing. For these reasons, the issues that arise when persons with progressive, life-limiting illnesses refuse or cannot take oral nourishment and fluids are emotionally complex and challenging. Deciding whether or not to initiate artificial nutrition and hydration (ANH) often is an important topic of discussion in these circumstances. Patients and families must consider all options given their values and beliefs, the patient’s prognosis, and clinicians’ recommendations. Decisions regarding ANH often are made in highly charged situations in which the decision-makers are concomitantly trying to cope

Corresponding Author: Sharun NV, Tutor, College of Nursing, All India Institute of Medical Sciences, Tatibandh, Raipur, Chhattisgarh 492099, India.

E-mail: sharunvijayan@gmail.com

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with multiple losses and grief.¹

Cancer is a prevalent disease in our society and all over nurses will encounter patient with cancer no matter where they practice. Cancer is a non communicable disease emerging as a major health problem in India. Based on the cancer registry data, it is estimated that there will be about 8,00,000 new cancer cases in India every year. Cancer rates associated with tobacco form 35 to 50% of all cancer in man and about 17% of cancer in women. Cancer can occur in all living cells in body, Epidemiological studies have shown that 70 to 90% of all cancer are environmental lifestyle related factors are most important & preventable among environmental exposure.²

The older population-persons 65 years or older-numbered 39.6 million in 2009. They represented 12.9% of the U.S. population, about one in every eight Americans. By 2030, there will be about 72.1 million older persons, more than twice their number in 2000. People 65+ represented 12.4% of the population in the year 2000 but are expected to grow to be 19% of the population by 2030.³

Artificial nutrition is any nonoral means of administering nutrition to a person. Methods encompass both enteral and intravenous (i.e., total parenteral nutrition, TPN; also referred to as hyperalimentation) routes of administration. Enteral feeding is administered by tube via several routes: nasogastric, gastrostomy, jejunostomy, and esophagostomy Artificial fluid therapy involves the nonoral delivery of fluid through one of the following routes: intravenous (via a peripheral or central line), subcutaneous (also called hypodermoclysis), rectal (proctoclysis), or enteral.^{4,5}

Need for the Study

Cancer is the leading cause of death worldwide, it accounted for 7.4 million deaths (around 13% of all deaths) in 2004. About 30% of cancer deaths can be prevented. In 2005, cancer killed approximately 826,000 people in India of which 519,000 were under the age of 70. Lung cancer is among the five main types of cancer leading to overall cancer mortality contributing about 1.3 million deaths/year globally. Tobacco use is the single most important risk factor for cancer. The economic cost of treating four major tobacco related diseases such as cancer, cardiovascular diseases, respiratory diseases and tuberculosis in India is as high as US\$1.7 billion. Globally, lung cancers (including trachea and bronchus cancers) are the most common cause of death from cancer among men. This is also the case in five of the seven regional groupings including

South East Asia. In India trachea, bronchus, lung cancers are the most common cancers found in men.⁶

As cancer survival intervals increase, recognition of and intervention for disease or treatment related end stage cancer patient are become more important. It is estimated that about 9 million new cancer are diagnosed every years and over 4.5 million people die from cancer. In India estimated number of new cases is about 7 lakh and 3.5 lakh people die of cancer. In Karnataka there would be 1.5 lakh cancer cases and about 35000 new cancer cases are added each year.⁷

As of 2002, the 1 year prevalence of lung cancer in India for males was 11,511, and the 5 year prevalence was 27,477 accounting for approximately 3% of global prevalence, and 55% of total prevalence in South Central Asia. For India, the age-adjusted incidence of lung cancer (10.8 per 100,000 men, 47,010 incident cases) is the first relative to that of all other types of cancer in men. The age adjusted incidence of cancer of the lip and oral cavity is 9.8 per 100,000 men (45,445 incident cases) and 8.3 per 100,000 men (36,731 incident cases) for other pharynx respectively.⁶⁻⁹

A prospective observational study was performed to assess the physiological changes of fluid status in terminally ill cancer patients with intestinal obstruction, Seirei Mikatabara Hospital in Japan. We obtained 9 pairs of blood samplings from hospice inpatients with irreversible bowel obstruction who underwent two or more laboratory examinations during the admission periods. The study result concluded that intravenous volume depletion with fluid retention symptoms was observed in terminally ill cancer patients with intestinal obstruction.^{10,11}

Top of Form

A study was conducted to determine role of participant the decision making to start or forgo artificial nutrition and hydration (ANH) in demented nursing home patients. Participant observation by two researchers in two Dutch nursing homes. The result concluded that most common participants in the ANH decision making are the nursing home physician (NHP), family, and (most frequently attending) nurses.^{12,13}

From the above statistical information and reviews researcher understood that artificial nutrition is very treatment important for the terminally ill cancer patients. Nurses must stay up-to-date with the current knowledge of clinical

issues related to artificial nutrition. Nursing students of today are the nurses of tomorrow. Therefore, the investigator is interested to evaluate the effectiveness of structured teaching programme on knowledge regarding artificial nutrition for terminally ill cancer patients among nursing students.

Review of Literature

The review of literature is considered as a systematic and critical review of the most important published scholarly literature on a particular topic. The scholarly literature can refer to published and unpublished based literature and conceptual literature material found in print and non-print forms. Major role is to develop a strong knowledge base to carry out research and other scholarly educational and clinical practice setting activities.¹⁵

The review of literature is organized and presented in the following sub-headings

1. Studies related to artificial nutrition among terminally ill cancer patients.
2. Studies related to educational intervention for nurses regarding artificial nutrition among terminally ill cancer patients.

Studies Related to Artificial Nutrition Among Terminally Ill Cancer Patients

A study was conducted to assess an effectiveness of Total Parenteral Nutrition in critically ill patients. Stress metabolism that develops in critically ill patients leads to acute malnutrition in approximately 40% of intensive care patients. Many of them cannot be fed enterally, and Total Parenteral Nutrition (TPN) is necessary. Seventy-one adult patients receiving TPN for at least 2 weeks were allocated to five groups according to their underlying disease: A-patients after cardiovascular surgery, B-patients with acute pancreatitis, C-multiple trauma victims, D-patients after abdominal surgery; and E-septic or leukemic patients. All patients were receiving "all-in-one" nutritional mixtures, consisting of amino acids, glucose, electrolytes, fat emulsion, vitamins and microelements. TPN increased serum total protein and serum albumin concentrations and improved nitrogen balance in all patients. The study concluded that standard TPN is sufficient for improvement of nutritional status during life-threatening illness.¹⁶

A study was conducted in to evaluate the use of parenteral nutrition in patients with advanced cancer. The purpose of this study was to describe patient-related variables in a cohort of advanced

cancer patients (ACPs) enrolled in the Northern Alberta Home Total Parenteral Nutrition Program (NAHTPNP). Thirty-eight ACPs received HPN during the study period, 24% of all patients admitted for Parenteral Nutrition. Bowel obstruction was the most common indication for initiating HPN (84%, 32) and ovarian cancer was the most common malignancy (34%, 13). Cancer patients who received HPN showed longer duration of life. Advanced cancer is the fastest growing indication for enrollment in the HPN program. HPN is an increasingly used therapy for patients with advanced cancer, most commonly for intestinal failure in the setting of bowel obstruction.¹⁷

A four year audit was carried out on patients who received Total parenteral nutrition. The study consisted of 278 patients who received 289 courses of Total parenteral nutrition over 5231 patient days in Saudi Arabian Hospital. The study findings showed that 147 patients were discharged healthy, out of these two required after home total parenteral nutrition. The overall mortality rate was 36%. I.C.U patients had the highest mortality (53%). Among the survivors, 74.8% showed an improvement in nutritional status. The incidence of metabolic complications and catheter sepsis were 2.9% and 3.6% respectively.^{18,19}

Studies Related to Educational Intervention for Nurses Regarding Artificial Nutrition Among Terminally Ill Cancer Patients

A quasi experimental study was conducted to investigate the effect of educational intervention on nurse's knowledge attitude and behavioural intentions regarding supply of artificial nutrition and hydration to terminal cancer patients (ANH). A sample of 88 nurses were enrolled from April to June 2011 in New Delhi. The nurses were randomly assigned in to experimental and control group (44 nurses in each group). The study findings showed that the mean post-test score of knowledge attitude and behavioural intentions experimental increased significantly ($z = -5.25$; $t = -5.19$; $z = -3.27$ and $p < 0.001$).²⁰

A quasi experimental study was conducted to investigate the effectiveness of an educational intervention on changing nursing practices and preventing catheter related infections in patient receiving total parenteral nutrition in the surgical clinics of Punjab. The related variable were examined before and after the educational intervention. The mean score of nurses practice score were 45.7 before and 66.5 after the intervention ($p < 0.05$). The findings of the study showed that the intervention

was successful in improving nursing practice. The mean post-test practice score (66.5) was more than mean pre-test score (45.7).²¹

A study was conducted in Japan to explore the effects of a five-hour interactive workshop based on the guideline of nurses' knowledge, confidence, self-reported practice, and nurse-perceived usefulness. The study was designed as a pre-post anonymous questionnaire survey. The nurses attended a five-hour interactive workshop based on the guideline and were asked to complete a questionnaire before and after the workshop. Of the 8 nurses who participated in this workshop, we obtained consent from 76 to complete the questionnaire. More than 80% of the nurses reported they would perform six of nine recommended practices after the workshop. The study concluded that nationwide dissemination of the guideline with interactive workshop education for nurses, in combination with physicians, is a promising method for improving the clinical practice of artificial hydration therapy for terminally ill cancer patients.^{22,23}

Materials and Methods

Statement of the Problem

"A study to evaluate the effectiveness of structured teaching program on knowledge regarding artificial nutrition for terminally ill cancer patients among third year B.Sc. Nursing students in a selected Nursing College, Bangalore."

Objectives of the Study

1. To assess the level of knowledge regarding artificial nutrition terminally ill cancer patients among third year B Sc Nursing students before and after structured teaching program.
2. To evaluate the effectiveness of structured teaching program regarding artificial nutrition for terminally ill cancer patients at the end of their life among third year B.Sc. Nursing students.
3. To find out the association between pretest and post-test knowledge scores of third year B Sc Nursing students regarding artificial nutrition for terminally ill cancer patients with selected socio-demographic variables.

Assumptions

- A₁:** Knowledge level differs from individual to individual.

A₂: Socio-demographic variables influence the knowledge of third year B.Sc. nursing students regarding artificial nutrition for terminally ill cancer patients.

A₃: Structured teaching program regarding artificial nutrition for terminally ill cancer patients will help to enhance the knowledge level of third year B.Sc. Nursing students.

Hypothesis

H₁: There is a significant difference in the level of knowledge regarding artificial nutrition for terminally ill cancer patients among third year B.Sc. Nursing students before and after structured teaching program.

H₂: There is a significant association between the pretest and post-test knowledge scores of third year B.Sc. Nursing students regarding artificial nutrition for terminally ill cancer patients.

Operational Definition

Evaluate

It refers to judging the overall level of knowledge of third year B.Sc. Nursing students regarding artificial nutrition for other terminally ill cancer patients before and after structured teaching program.

Effectiveness

It refers to the extent to which structured teaching program regarding artificial nutrition for terminally ill cancer patients enhances the knowledge level of third year B.Sc. Nursing students.

Structured teaching program

It is a systematically planned and organized teaching program regarding artificial nutrition for terminally ill cancer patients enhances the knowledge level of third year B Sc Nursing students.

Artificial Nutrition

It refers to a way of supplying all nutritional needs of the body by bypassing the digestive system and dripping nutrient solution directly into vein.

Terminal ill patient:

It refers to a person who is sick and is diagnosed with a disease that will take their life.

Cancer patients:

It refers to patients who are diagnosed to have abnormal multiplication of cells.

Third year B.Sc nursing students:

It refers to students in their third year of Baccalaureate in nursing program

Nursing College

It refers to an educational institution where students undergo Bachelors degree in nursing education.

Variables

Dependant Variable:

Knowledge of third year B.Sc. Nursing students regarding artificial nutrition for terminally ill cancer patients.

Independent Variable:

Structured teaching program regarding artificial nutrition for \ terminally ill cancer patients.

Socio-demographic variables:

Age, sex, type of family, family income, religion and residential area.

Limitations

1. The study is limited to third year BSc Nursing students in a selected Nursing Colleges of Bangalore.
2. The study is limited to 50 Nursing students.
3. The duration of data collection is limited to one month.

Sources of Data

Third year B.Sc. Nursing students in a selected Nursing College of Bangalore.

Method of Data Collection

Research approach: Evaluative approach.

Research design: Pure Experimental, pretest-post-test design.

Sampling technique: Probability, simple random sampling technique.

Sample size: 50 third year B.Sc. Nursing students.

Setting of the study: A selected Nursing College of Bangalore.

Sampling Criteria

Inclusion Criteria:

- B.Sc. Nursing students studying in third year.

- Third year B.Sc. Nursing students who are willing to participate in the study.
- Third year B.S.c Nursing students who are available during data collection.

Exclusion Criteria

- Third year B.Sc. Nursing students who do not know English.
- Third year B.Sc. Nursing students who are leave during data collection.

Data Collection Tool

A structured knowledge questionnaire regarding artificial nutrition will be prepared to assess the knowledge. The content validity of the tool will be obtained in consultation with guide and experts.

Section A: socio demographic Performa includes age, sex, type of family, family income, religion and residential area.

Section B: Structured knowledge questionnaire regarding artificial nutrition for terminally ill patients.

Data Analysis Method

Data analysis will be done by using descriptive statistics such as frequency distribution, percentage, mean and standard deviation and inferential statistics such as chi-square and *t*-test.

Results

In this study majority of the samples pre-test level of knowledge, 34 (68%) are having inadequate knowledge, 16 (32%) are having moderate knowledge and none of the samples have adequate knowledge where as in the post-test 33 (66%) are having adequate knowledge, 17 (34%) are having moderate knowledge and none of the samples have inadequate knowledge on artificial nutrition for terminally ill cancer patients. This showed that the structured teaching program was highly effective in improving the knowledge of samples on artificial nutrition for terminally ill cancer patients. The pre-test mean level of knowledge with SD was 13.66 + 2.8 and mean percentage was 45.53% where as in the post-test mean level of knowledge with SD was 24.5 + 2.1 and mean percentage was 81.66% regarding artificial nutrition for the terminally ill patients. The paired *t* test was used to assess the effectiveness of the STP. The paired *t*-value shows that 20.77 df-59, $p < 0.05$. The mean difference was 36.33. hence the structured teaching program was

effective. There was positive correlation between the pre-test and post-test level of knowledge i.e. 0.27. There was an association between the pre-test levels of knowledge and age 4.79, $df=2$, $p < 0.05$, S^* and did not shown any association between the other demographic variables.

Discussion

- The study can be replicated in a larger sample for better generalization.
- Follow-up studies can be conducted to evaluate the effectiveness of the STP on knowledge regarding artificial nutrition for the terminally ill cancer patients.
- A similar kind of study can be conducted among the general nursing and other batches of Basic B.Sc. Nursing students.
- Periodical assessment program about artificial nutrition for the terminally ill cancer patients related knowledge, activities and actions should be conducted for the nurses.
- Experimental studies can be conducted with large sample size among Basic B.Sc. Nursing Students.

Conclusion

Structured teaching program was effective in enhancing the levels of knowledge of third year B.Sc. Nursing students regarding artificial nutrition for terminally ill cancer patients.

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