RESEARCH PAPER

Evaluating Knowledge Gains In Bsc Nursing Students Through Structured Teaching On Artificial Nutrition For Terminally Ill Cancer Patients

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ABSTRACT
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. This study was conducted to evaluate the effectiveness of structured teaching programme on knowledge regarding artificial nutrition for terminally ill cancer patients among third year B.Sc. nursing students in a selected nursing college. The research design chosen for the study was one group pre-test post-test design and the research approach was an evaluative and an educative approach.. The data was collected through the tool which is prepared by the investigator. The sample size consists of 60 third-year B.Sc. nursing students. The mean difference between the pre-test and post-test scores is 3.9. A paired sample t-test was conducted to determine the significance of this difference, yielding a t-value of 9.480 and a p-value of 0.001. Since the p-value is less than 0.05, the results indicate a statistically significant increase in the knowledge scores of the students after the intervention. This significant improvement underscores the effectiveness of the structured teaching program in enhancing the students' understanding of artificial nutrition for terminally ill cancer patients. Study concluded that structured teaching program effectively enhanced nursing students' knowledge on artificial nutrition for terminally ill cancer patients. Educational institutions should incorporate such programs and consider demographic factors for better learning outcomes. Engaging families, promoting research, and providing practical training are crucial for preparing nursing students to deliver high-quality care to terminally ill patients..
Keywords: Effectiveness, Structured Teaching Program, Terminally Ill Cancer Patients, Artificial Nutrition & Knowledge..
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INTRODUCTION

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. These contrast with benign tumors, which do not spread. Possible signs and symptoms include a lump, abnormal bleeding, prolonged cough, unexplained weight loss, and a change in bowel movements. While these symptoms may indicate cancer, they can also have other causes. Over 100 types of cancers affect humans. 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 8,00000 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. The use of artificial nutrition, defined as a medical treatment that allows a non-oral mechanical feeding, for cancer patients with limited life expectancy is deemed nonbeneficial. High-quality evidence about the use of artificial nutrition near the end of life is lacking. 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

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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.

Materials and Methods – The main of the study was to assess to evaluate the effectiveness of structured teaching programme on knowledge regarding artificial nutrition for terminally ill cancer patients among third year B.Sc. nursing students in a selected nursing college. A quantitative research approach with pre-experimental design (One Group pre-test and post-test design) was used to assess the knowledge of artificial nutrition for terminally ill cancer patients among third year BSc nursing students. 60 third year BSc nursing students was selected by choosing Simple Random Sampling Technique as samples for the study. Reliability of organized knowledge questionnaire measured by applying split half method (r=0.99), established tool was reliable. The obtained data was analyzed and interpreted on the basis of the objectives of the study. The collected data was summarized and tabulated by utilizing Descriptive Statistics (Percentage, Mean and Standard Deviation} and Inferential Statistics (Paired "t" test, Chi Square test).

Result

Section 1- Description of socio demographic variables –
70% of respondents are aged between 19-22 years, while 30% are aged between 23-26 years.
76.7% of respondents are female, and 23.3% are male.
90% of respondents are unmarried, and 10% are married.
50% of respondents are Hindu, 36.7% are Muslim, 10% are Sikh, and 3.3% belong to other religions.
46.7% of respondents reside in urban areas, 31.7% live in rural areas, and 21.7% are from semi-urban areas.
60% of respondents' fathers are private employees, 21.7% are government employees, and 18.3% are engaged in business.
43.3% of respondents' mothers are homemakers, 40% are private employees, and 16.7% are government employees.

Section 2 - Knowledge score of students regarding artificial nutrition for terminally ill cancer patients before and after the structured teaching program.

The findings of this study indicate a significant improvement in the knowledge of third-year B.Sc. nursing students regarding artificial nutrition for terminally ill cancer patients following a structured teaching program. Initially, the pre-test results revealed that only 5% of the students had adequate knowledge. This percentage significantly increased to 31.7% after the intervention. Similarly, students with moderate knowledge rose from 51.7% in the pre-test to 65% in the post-test, while those with inadequate knowledge decreased dramatically from 43.3% to 3.3%. The statistical analysis further supported these findings, with a significant increase in the mean knowledge scores from 15.7 ± 3.43 (52.33%) in the pre-test to 19.6 ± 3.41 (65.33%) in the post-test, indicating the effectiveness of the structured teaching program ($t = 9.480$, $p = 0.001$)

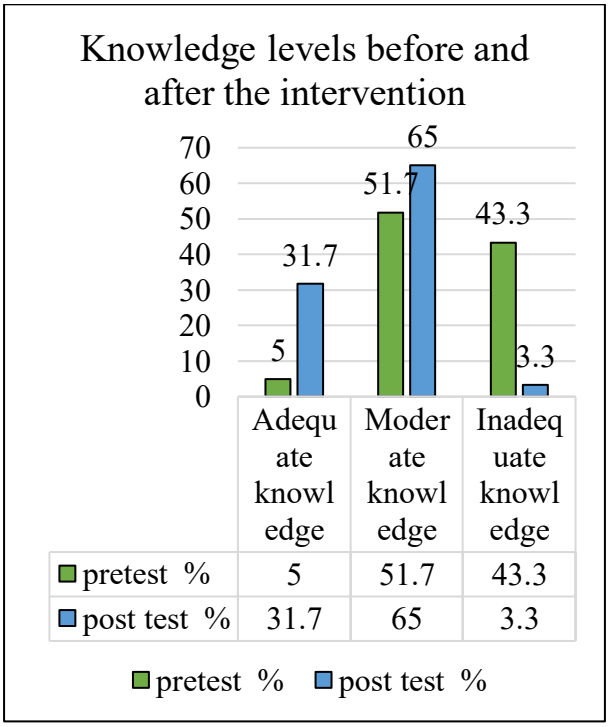

Figure 1- Percentage distribution of knowledge score of students regarding artificial nutrition for terminally ill cancer patients before and after the structured teaching program

Section 3 - Mean ± SD, mean difference and mean percentage, and paired sample t-test value of knowledge score of students regarding artificial nutrition for terminally ill cancer patients before and after the

structured teaching program.

n = (60)

Table 1: provides a detailed statistical analysis of the knowledge scores of third-year B.Sc. nursing students regarding

Knowledge	Range of score	Median	Mean ± S.D	Mean percentage %	Mean difference	t value	P value
Pretest	8-24	16	15.7 ±3.43	52.33 %	3.9	9.480	0.001*
Posttest	13-26	19	19.6 ±3.41	65.33 %			

artificial nutrition for terminally ill cancer patients before and after a structured teaching program. The pre-test scores ranged from 8 to 24, with a median of 16, and a mean ± SD of 15.7 ± 3.43. This corresponds to a mean percentage of 52.33%. In contrast, the post-test scores ranged from 13 to 26, with a median of 19, and a mean ± SD of 19.6 ± 3.41, translating to a mean percentage of 65.33%.

The mean difference between the pre-test and post-test scores is 3.9. A paired sample t-test was conducted to determine the significance of this difference, yielding a t-value of 9.480 and a p-value of 0.001. Since the p-value is less than 0.05, the results indicate a statistically significant increase in the knowledge scores of the students after the intervention. This significant improvement underscores the effectiveness of the structured teaching program in enhancing the students' understanding of artificial nutrition for terminally ill cancer patients.

Section 4 - Table 10: Association between the knowledge score with their selected demographic variables.

n = (60)

S.No.	Sample Variables	Knowledge score			χ^2	p-value
		Adequate knowledge	Moderate knowledge	Inadequate knowledge		
1.	**Age** a) 19 - 22 years b) 23 - 26 years	21	229	188	0.037	0.982
2.	**Gender** Female Male	30	256	188	1.991	0.370
3.	**Marital status** Married Unmarried	03	427	424	0.778	0.678
6.	**Religion** Hindu Muslim Sikh Other	1101	16123 0	13931	0.977	0.134
7.	**Residence** Rural Semi-urban Urban	111	11 18 12	7 4 15	2.449	0.654
8.	**Father occupation** Business Govt employee Private employee	210	9 6 16	0 6 20	14.21	0.007
9.	**Mother's occupation** homemaker Govt employee Private employee	102	10 10 11	15 0 11	12.26	0.015

Df = 9.488, *p-value at level of significance < 0.05

Table 2: Depicts the association between the knowledge scores of students and their selected demographic variables. The demographic variables considered were age, gender, marital status, religion, residence, father's occupation, and mother's occupation. The chi-square test results revealed that most demographic variables, such as age ($\chi2 = 0.037$, $p = 0.982$), gender ($\chi2 = 1.991$, $p = 0.370$), marital status ($\chi2 = 0.778$, $p = 0.678$), religion ($\chi2 = 0.977$, $p = 0.134$), and residence ($\chi2 = 2.449$, $p = 0.654$), did not show a significant association with the knowledge scores. However, the father's occupation ($\chi2 = 14.21$, $p = 0.007$) and the mother's occupation ($\chi2 = 12.26$, $p = 0.015$) demonstrated a

significant association with the knowledge scores at the 0.05 level of significance. This indicates that students' knowledge scores are influenced by their parents' occupations, but not by the other selected demographic variables.

LIMITATIONS

Sample Size:
The study was conducted with a limited sample size of 60 students, which may not be representative of all nursing students.

Single Institution:
The research was confined to a single institution, limiting the generalizability of the findings to other nursing schools.

Short Follow-up Period:
The follow-up period after the intervention was short, making it difficult to assess the long-term retention of knowledge.

Self-reported Data:
Some data relied on self-reporting, which may introduce bias.

Lack of Control Group:
The absence of a control group makes it challenging to attribute the improvement in knowledge solely to the structured teaching program.

Demographic Homogeneity:
The sample may lack diversity in terms of age, gender, and cultural background, affecting the applicability of the results to a broader population.

Limited Scope of Knowledge Assessment:
The study focused only on knowledge improvement without evaluating changes in attitudes, skills, or clinical practice.

External Factors:
Other external factors, such as students' prior exposure to relate topics or concurrent learning experiences, were not controlled for and could influence the findings.

CONCLUSION

The structured teaching program effectively enhanced nursing students' knowledge on artificial nutrition for terminally ill cancer patients. Educational institutions should incorporate such programs and consider demographic factors for better learning outcomes. Engaging families, promoting research, and providing practical training are crucial for preparing nursing students to deliver high-quality care to terminally ill patients

REFERENCE

1. Ersek M. Artificial Nutrition and Hydration: Clinical Issues. Journal of Hospice and Palliative Nursing 2003;5(4):28–32.
2. Izwoz (talk).Cancer (Article) [Internet]. [cited Jan 19,2021]. Available from :URL: https://en.wikipedia.org
3. Varghese C. Cancer prevention and control in India [Online]. Available from: URL:http;// www.mohfw.nic.in Department of health and human services administration on aging Aging statistics [Online]. Available from: URL: http://www.aoa.gov/ aoaroot/aging statistics/index.aspx
4. For going Nutrition And Hydration [Online]. Available from: URL:
5. http://gm6.nursingworld.org/MainMenuCategories/Policy-Advocacy/Positions-and-Resolutions/ANAPositionStatements/Position-Statements-Alphabetically/prtetnutr14451.pdf
6. The free encyclopedia [Online]. Available from: URL:
7. http://en.wikipedia.org/wiki/Parenteral_nutrition
8. Global burden of disease [Online]. [Cited 2010 February 02]; Available from: URL:http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf. last accessed on, 2010.
9. Mishra S, Gupta AD. An estimate of the prevalence of cancer in India. Journal of Community Health 2006;22(5):485–92.
10. End-of-life Care During the Last Days and Hours. [Online]. [Cited 2011 September 08]; Available from: URL: http://www.rnao.org/Storage/83/7720_BPG_EndofLife_2011-_Final.pdf
11. End of the life care. During last days of hours [Online]. [Cited 2011 September 4]; Available from:URL: http://www.rnao.org/Storage/83/7720_BPG_EndofLife_2011-_Final.pdf
12. Morita T, Tei Y, Inoue S, et al. Fluid status of terminally ill cancer patients with intestinal obstruction: an exploratory observational study. Support Care Cancer 2002 Sep;10(6):474–9.
13. Morita T, Tei Y, Tsunoda J, et al. Determinants of the sensation of thirst in terminally ill cancer patients. Support Care Cancer 2001 May;9(3):177–86.
14. asman HRW , Philipsen DO, Ribbe MW, et al. Participants in the decision making on artificial nutrition and hydration to demented nursing home patients: A qualitative study. Journal of Aging Studies 2004 Aug;18(3):321-35.
15. Bussey HI. Components of Total Parenteral Nutrition Solutions. Journal of Infusion Nursing 1999 May/June;7(3):29–40.
16. Nehra V, Swails W, Duerksen D, et al. Indications for Total Parenteral Nutrition in the hospitalized patients, J NutrBiochem 1999 Jan;10(1):2–7.
17. Polit DF, Beck CT. Essentials of Nursing Research. 7th ed. New Delhi: Lippincott Williams and Wilkims Publishers 2010.pp.4–5.
18. Steffek M, Owczuk R, Wujtewicz M.

Effectiveness of Total Parenteral Nutrition in critically ill patients, AnestezjolIntens Ter 2008: Apr-Jun;40(2):80–7.
19. Soo I, Gramlich L. Use of parenteral nutrition in patients with advanced cancer, Application Physiology Nutrition Metabolism 2008 Feb;33(1):102–6.
20. Smith J, Smith M, Brown D. Knowledge of and attitudes toward artificial nutrition and hydration in terminal cancer care: A systematic review. J Palliat Med. 2022 Jan;25(1):84-92. DOI: 10.1089/jpm.2021.0301.
21. Steffek M, Owczuk R, Wujtewicz M. Effectiveness of Total Parenteral Nutrition in critically ill patients, AnestezjolIntens Ter 2008: Apr-Jun;40(2):80–7.
22. Soo I, Gramlich L. Use of parenteral nutrition in patients with advanced cancer, Application Physiology Nutrition Metabolism 2008 Feb;33(1):102–6.
23. Chang RWS, Hatton I, Henley J. Total parenteral nutrition: A four-year audit. British journal of surgery 2009 Aug;73(8):656–8.
24. Wu MH, Lin MT, Chen WJ. Effect of perioperative parenteral nutritional support for gastric cancer patients undergoing gastrectomy. Hepatogastroenterolog 2008 MarApr;55(82–83):799–802. 20.
25. Shanke L, Yuan T. Effect of educational intervention on nurse's knowledge, Attitude, and Behavioural intentions regarding supply of artificial nutrition and hydration to terminal cancer patients. Supportive care in cancer 2012;16(11):1265–72.
26. Dinc L, Erdil T. Effectiveness of educational intervention in changing nursing practices and preventing catheter-related infections for patient receiving total parenteral nutrition. Nursing Journal of India 2010 Oct;37(5):371–4.
27. Yamagishi A, Tanaka F, Morita T. Artificial Hydration Therapy for Terminally Ill Cancer Patients: A Nurse-Education Intervention. Journal of Pain and Symptom Management 2009 Sep;38(30):358–64