

Engaging Undergraduate Students In Prevention Of Tumor Lysis Syndrome.

Jannet Reena Purani^{1*}, Blessi Martuise M. ² and Shobha Sharma³.

^{1*}Assistant Professor, P P Savani School of Nursing, P P Savani University, Surat, Gujarat.

²Assistant Professor, P P Savani School of Nursing, P P Savani University, Surat, Gujarat.

³Nursing graduate, P P Savani School of Nursing, P P Savani University, Surat, Gujarat.

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ABSTRACT

Cells are the body's smallest functional units. A tumor is formed by cells that have escaped the normal control system and have multiplied in an uncontrolled and disorderly manner. A clinical condition resulting from a metabolic, neurologic, cardiovascular, hematologic, and/or infectious change caused by cancer or its treatment that requires immediate intervention to prevent loss of life or quality of life is called as Tumor Lysis Syndrome. It may affect a patient with lymphoma or leukaemia, or a patient with a large tumor burden. Tumor Lysis Syndrome (TLS) is characterized by a group of metabolic derangements including hyperuricemia, hyperkalaemia, hyperphosphatemia, hypocalcaemia and uricemia caused by the massive and abrupt release of cellular components into the blood after the rapid lysis of malignant cells.

Aim: The main aim of this study was to assess the knowledge regarding prevention of tumor lysis syndrome among undergraduate nursing students and provide them with learning aids to enhance their knowledge.

Materials and Methods: In the present study, a pre-experimental research design was adopted. The sample consists of 40 undergraduate Nursing students studying in selected nursing college in Surat District, Gujarat state. The data-collection tool consisted of a personal profile and structured interview schedule to assess knowledge regarding prevention of tumor lysis syndrome. Data collection was done on 6th July 2023. The data was analyzed and interpreted using descriptive and inferential statistics.

Results: The present study has revealed that the selected samples of Undergraduate Nursing Students had significant increase in knowledge. The mean pre-test knowledge was 8.075 and the mean post-test knowledge was 16.10, significant difference between pre-test and post-test knowledge was significantly tested using paired 't' test and it was found significant at 0.05 level of significance. Also, the pre-test knowledge score was associated with socio-demographic variables like area of interest, area of clinical posting in the previous year, previous knowledge, source of knowledge, exposure to case of tumor lysis syndrome during clinical posting in previous academic year.

Conclusion: It was concluded on the basis of the findings of that the administration of learning aid was effective in increasing knowledge among undergraduate nursing students.

INTRODUCTION:

Cancer is an umbrella term for group of disorders which is defined as abnormal cell growth, multiply uncontrollably, and can invade other tissues and metastasize. Abnormal tissue masses are called solid tumors and may be benign or malignant. A tumor is formed by cells that have escaped the normal control system and have multiplied in an uncontrolled and disorderly manner.

Systemic therapy is an important part of multidisciplinary management in the majority of malignancies, whether it used as primary, adjunct, or palliative care. Numerous cancers now have higher survival rates and/or

better quality of life due to the development of new medications and greater use of those already available. Chemotherapy for cancer has changed the disease's path from one with a nearly universally fatal and tragic outcome to one that can be managed and even cured with the proper treatment. Chemotherapy works to stop tumor growth and cell division, which prevents invasion and metastatic. However, because chemotherapy also has an impact on normal cells, this leads to hazardous side effects.

Oncological emergency is a clinical condition resulting from a metabolic, neurologic, cardiovascular, hematologic, and/or infectious change caused by cancer or its treatment that requires immediate intervention to prevent loss of life or quality of life. Tumor Lysis Syndrome (TLS) is an onco-metabolic emergency. Tumor Lysis Syndrome is a group of metabolic disorders which occur due to therapies of cancer in which there is an abrupt release of intracellular metabolites after the lysis of tumor cells. There is a series of metabolic infestation such as hyperuricemia, hyperkalemia, hyperphosphatemia, and secondary hypocalcaemia. Besides seizures and cardiac arrhythmias, acute kidney injury (AKI) is the hall mark of TLS, which determines the clinical outcomes. It usually occurs during chemotherapy or within a week of starting chemotherapy. Monitoring hydration and hypouricemic therapy are the fundamental preventive measures in patients who are at risk for TLS. Intravenous hydration is the corner stone of preventing TLS.

NEED OF THE STUDY:

“Close the Care Gap”. The quoted sentence was the theme for the year 2022-2024. Preventing cancer and raising quality of their life are recurring themes. Cancer patients need special care which improve their quality of life and protect them from complications. Nevertheless, it is not always possible to prevent undesired events, thus knowledge on oncological emergencies is needed for fast interventions that can save lives. About 30 per cent of cancer related deaths can be prevented by appropriating timely checkout of emergencies. It is essential to remember that the prevention of disease is always more cost-effective than the treatment of an established disease.

OBJECTIVES OF THE STUDY:

- To Assess the knowledge of undergraduate nursing students before and after the administration of the learning aids regarding prevention of tumor lysis syndrome.
- To Assess the effectiveness of learning aids regarding prevention of tumor lysis syndrome among undergraduate nursing students.
- To Find out Association between pre-test knowledge score with socio demographic variable regarding prevention of tumor lysis syndrome among undergraduate nursing students.

ASSUMPTION:

- The undergraduate nursing students may have some knowledge regarding prevention of tumor lysis syndrome.
- The learning aids will enhance the knowledge regarding prevention of tumor lysis syndrome.

RESEARCH METHODOLOGY:

A pre-experimental approach with one group pretest post-test design was used for this study.

VARIABLES:

In this study independent variables were the learning aids administered to the undergraduate nursing students and the dependent variables were the undergraduate nursing students. The attribute variables included the demographic variables comprising age, gender, residence area, area of interest, area of clinical posting, previous knowledge, history of cancer in family and experience of coming across any case of TLS during clinical posting.

RESEARCH SETTING:

The study was conducted in a selected nursing college in Surat District, Gujarat state.

TARGET POPULATION, SAMPLE SIZE AND SAMPLING TECHNIQUE:

For the present study, target population was 40 undergraduate nursing students studying in a selected nursing college in Surat District, Gujarat state. With the help of Probability sampling technique, Investigator has selected the samples. The Investigator selected 90% by Lottery method of Simple Random Sampling and 10% student will be taken for pilot study.

TOOLS FOR DATA COLLECTION:

A structured knowledge questionnaire and a structured teaching programme as a learning aid regarding prevention of tumor lysis syndrome were selected as tools. The Structured Knowledge questionnaire focused on introduction, definition, risk factor, sign and symptoms, prevention, protocol for the management of establishment of tumor lysis syndrome. The structured teaching programme included introduction, definition, risk factors, sign and symptoms, prevention, protocol for the management of tumor lysis syndrome. Lecture cum discussion and demonstration was adopted as the method of teaching along with appropriate A.V. Aids. The reliability of the structured knowledge questionnaire was determined by 'Test-retest method' using Karl Pearson formula and was found to be 0.81.

DATA COLLECTION:

After getting the formal permission from the concerned authorities the purpose, objectives and the method of implementation of the tool was discussed with the samples and an informed consent was taken. The investigator administered pre-test on 1st day and then administered Structed Teaching Programme on the same day. The post-test was taken after 7 days.

DATA ANALYSIS & RESULTS:

The data in section-I was analyzed using frequency and percentage. The data in section-II collected will be analyzed with help of descriptive (mean and standard deviation) and inferential statistics ('t' test and chi square test).

TABLE 1: Frequency and percentage wise distribution of Age, Gender, Residence area. (N=40)

DEMOGRAPHIC VARIABLES		FREQUENCY	PERCENTAGE
Age	19-20 Years	12	30%
	21-22 Years	20	50%
	23-24 Years	05	12.5%
	>24 Years	03	7.5%
Gender	Male	18	45%
	Female	22	55%
ResidenceArea	Urban	24	60%
	Rural	16	40%
Area of Interest	Medical SurgicalNursing	23	57.5%
	Midwifery and Obstetrical Nursing	05	12.5%
	Child Health Nursing	03	7.5%
	Mental Health Nursing	09	22.5%
Area of Clinical Posting in Previous Academic Year	Medical / Surgical	21	52.5%
	Oncology	00	00%
	Emergency	00	00%
	OPD	00	00%
	All	19	47.5%
Previous Knowledge	Yes	09	22.5%
	No	31	77.5%
Source of Knowledge	Newspaper	00	00%
	Books	06	15%
	Journals/ Magazines	00	00%
	Classroom/ workshop	03	7.5%
	Others	00	00%
History of Cancer in Family	Yes	04	10%
	No	36	90%
Came Across anycase of TLS	Yes	02	5.00%
	No	38	95%

Table 2: Shows the Mean and SD value of pretest knowledge score and post-test knowledge score among different demographic variables.

DEMOGRAPHIC VARIABLES		N	MEAN		STANDARD DEVIATION	
			Pre-test	Post-test	Pre-test	Post-test
Age	19-20 years	12	8.416	24.500	1.729	2.876
	21-22 years	20	7.850	23.950	1.954	3.410
	22-23 years	05	7.000	22.400	2.000	3.361
	>24 years	03	10.000	27.333	1.000	1.527
Gender	Male	18	8.277	24.388	2.164	3.432
	Female	22	7.909	24.000	1.715	3.147
Residence area	Urban	24	8.458	23.187	2.126	3.103
	Rural	16	7.500	24.833	1.414	3.225
Area of interest	Medical Surgical Nursing	23	8.652	24.782	1.968	3.397
	Midwifery and Obstetrical Nursing	05	8.000	26.000	0.707	2.121
	Child Health Nursing	03	7.666	22.000	1.527	2.000
	Mental Health Nursing	09	6.777	22.333	1.855	2.738
Area of clinical posting in previous academic Year	Medical / Surgical	19	8.631	24.789	2.241	3.275
	Oncology	00	00	00	00	00
	Emergency	00	00	00	00	00
	OPD	00	00	00	00	00
	All	21	7.571	23.619	1.434	3.185
Previous knowledge	Yes	09	10.000	26.777	1.118	1.715
	No	31	7.516	23.419	1.729	3.201
Source of knowledge	Newspaper	00	00	00	00	00
	Books	06	9.833	27.166	0.983	1.722
	Journals/ Magazines	00	00	00	00	00
	Classroom/workshop	03	9.666	26.000	0.577	1.732
	Others	00	00	00	00	00
History of Cancer in family	Yes	04	8.000	23.500	2.160	3.109
	No	36	8.083	24.250	1.917	3.289
Came Across any case of TLS	Yes	02	11.500	28.500	0.707	0.716
	No	38	7.894	23.947	1.782	3.161

Table 3: frequency and percentage of level of knowledge according to pre-test post-test regarding prevention of tumor lysis syndrome.

Level Of Knowledge	Score	Pretest		Post-test	
		Frequency	Percentage	Frequency	Percentage
Poor	≤10 (<50%)	34	85%	00	00%
Average	11-20 (75%)	06	15%	09	22.65%
Good	≥ 20 (>75%)	00	00%	31	77.5%

When the Comparison between Pre-Test and Post-Test knowledge Score was made, the mean post-test knowledge score 24.175 was higher than the mean pre-test knowledge score 8.075. The mean post-test knowledge score was significantly higher than the mean knowledge score with the mean difference of 16.10 and the calculated 't' value ($t = 53.43$) was greater than tabulated 't' value ($t = 2.02$) which was statistically proved. This revealed that the structured teaching programme was effective in terms of knowledge among the samples. Also the association between levels of knowledge with the selected demographic variables revealed that there is an significant association between the area of interest and the level of knowledge, Area of Clinical Posting in Previous Academic Year, Source of Knowledge and among those who came across any case of TLS.

CONCLUSION:

Although the undergraduate nursing students had exposure to the clinical postings in the oncology wards and had some previous knowledge regarding the tumor lysis syndrome, there existed a knowledge deficit among them. The structure teaching programme was found to be effective in enhancing the knowledge of the samples and the samples gained significant knowledge after exposure to the learning aids. The findings of the study indicate that more emphasis should be placed in the engaging the students in teaching about tumor lysis syndrome and its prevention which in turn will help them to handle oncological emergencies in clinical practice.

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