RV JOURNAL OF NURSING SCIENCES
VOLUME 4 | ISSUE 4 | OCTOBER- DECEMBER 2025 E-ISSN No. 2583-472X
rvjns.rvcn@rvei.edu.in | Email: rvjns.rvcn@rvei.edu.in

A Study to Assess the Level of Knowledge Regarding Selected Pediatric Oenological Emergencies among Staff Nurses at Smvmch, Pondicherry

M.Priyadharsini
Assistant Professor, St. Xavier College of Nursing, Kumbakonam.
Email: apdharsini24@gmail.com Mob No. 6374549186

ARTICLEINFO

Article history:
Received 26 August 2025
Received in revised form
09 September 2025
Accepted 12September 2025
Available online 10 October 2025

Keywords:
Pediatric Oncology, Tumor Lyses Syndrome, Superior Vena Cava Syndrome and Spinal Cord Compression

ABSTRACT

Introduction: Pediatric ontological emergencies are critical clinical conditions that arise due to structural or metabolic changes caused by cancer or its treatment, requiring immediate intervention to prevent loss of life or improve quality of life. The emergency department is often the first point of contact for newly diagnosed pediatric oncology patients, who may be severely ill at presentation. Common pediatric oenological emergencies include Tumor Lyses Syndrome, Superior Vena Cava Syndrome, and Spinal Cord Compression. This study aimed to review these emergencies in critical care settings and identify key management strategies to support ICU nursing staff.Methods:A quantitative research approach with a descriptive research design was adopted. The study was conducted among 30 staff nurses at Sri ManakulaVinayagar Nursing College, Pondicherry.

A structured questionnaire was used to assess their knowledge regarding selected pediatric oenological emergencies. The study also examined the association between the nurse's level of knowledge and selected demographic variables. Results: The findings revealed that 44% of participants had inadequate knowledge, while 16% demonstrated moderate knowledge regarding pediatric oenological emergencies.

These results indicate that while some nurses have foundational knowledge and clinical exposure, there is a significant gap in comprehensive understanding and preparedness for managing such emergencies. Discussion: The study highlights the need for targeted educational interventions to enhance nurse's knowledge and confidence in managing pediatric oenological emergencies. Recognizing early signs, even before changes in vital signs occur, is critical in improving patient outcomes. Continued training and clinical experience can help ICU nurses respond more effectively to these life-threatening situations.

Introduction

Cancer accounts for an estimated 7.6 million deaths annually worldwide, with India contributing around 1.5 million new cases each year. The pediatric oncology may present with a variety of life-threatening situations, including those resulting from structural or functional compromise of the cardiopulmonary or neurologic systems, hematologic abnormalities, or a compromised immune system. Emergencies in these children may occur as a result of the disease itself or as a consequence of treatment. The emergency department is often the first point of contact for newly diagnosed pediatric oncology patients, and they may be quite ill on initial presentation.

Tumor lyses syndrome (TLS) is an oncologic emergency that is caused by massive tumor cell lysis with the release of large amounts of potassium, phosphate, and nucleic acids onto the systemic circulation. High concentrations of both uric acid and phosphate potentiate the risk of acute kidney injury because uric acid precipitates more readily in the presence of calcium phosphate and vice versa. The potential severity of complications from tumor lysis syndrome (TLS) necessitates preventive measures in patients who are at high or intermediate risk for this complication and prompts immediate treatment in the event that TLS does occur. The major causes of death in children with clinical TLS were hemorrhage and renal failure, and clinical TLS was considered a major cause of Death in 19 of the 772 children (2percent). In addition to an increase in mortality is also associated with higher rates of treatment-related complications and cost.

Superior vena cava syndrome (SVCS) refers to the signs and symptoms of compression of superior vena cava. Concomitant obstruction of airway leading to stridor is termed as superior meditational syndrome. Superior vena cava is the major vessel for drainage of venous blood from head, neck, upper extremities and upper thorax. It is thin walled and compliant and therefore vulnerable to compression by any space occupying lesion in the vicinity. The clinical features include swelling of the face, neck and upper torso, prominence of the neck and superficial chest veins, cyanosis or plethora, stridor, dyspnea, cough, chest pain and headache.

Spinal cord compression occurs when a mass places pressure on the cord. A mass can include a tumor or bone fragment. Compression can develop anywhere along the spinal cord from the neck to the lower spine. Numbness or weakness in the legs, hands, and arms can also develop. A condition known as cauda equine syndrome can develop if the compression is in the lumbar area. The symptoms of this syndrome include: severe pain and weakness in the legs, a loss of bowel and bladder control, severe numbness in the back of the legs and inner thighs. Spinal cord compression affects fine motor skills and co-ordinations.

The main objectives of the prevention is to review common oncological emergencies that occur in critical care settings, and identify key components in the management of these emergencies as they occur for the betterment of ICU nursing staff. Oncology nurses also must be aware that children can deteriorate physically before there are changes in vital signs. Oncology nurse need to be educated about these emergencies and know the initial steps to take when they occur. If a nurse has not been exposed to dealing with oncologic emergencies, he or she can shadow other nurses or providers who have experience handling oncologic emergencies to better prepare themselves.Nurses play a pivotal role in the initial assessment and management of these emergencies, as they are often the first to recognize subtle clinical changes. However, limited exposure and inadequate knowledge may hinder their ability to respond effectively. Continuous education and training are therefore essential to enhance preparedness and ensure quality pediatric oncological care.

Need for the Study

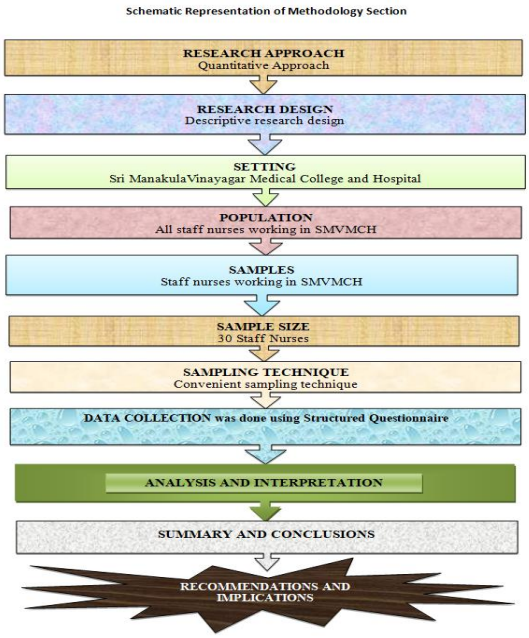
According to the Times of India (2018), childhood cancer incidence in India increases by 1.1% annually, with the country accounting for 20% of global childhood cancers. Leukemia, lymphoma, and CNS tumors are the most common pediatric cancers, yet survival rates in India remain at 50%, lower than the >70% observed in Western nations. This gap underscores the importance of enhancing nursing knowledge on oncological emergencies to ensure timely interventions and improved outcomes.

Objectives

1. To assess the level of knowledge regarding selected pediatric oncological emergencies among staff nurses.
2. To associate the level of knowledge with selected demographic variables.

Methodology

Research Approach and Design: A quantitative research approachwith adescriptive research designwas adopted for the study.Setting: The study was conducted atSriManakulaVinayagar Medical College and Hospital (SMVMCH), Kalitheerthalkuppam, Puducherry.Population and Sample: The target population consisted of all staff nurses working at SMVMCH. The study sample comprised staff nurses posted inwards and critical care unitsof the hospital. A total of30 staff nurseswere included.Sampling Technique: Anon-probability convenient sampling techniquewas used to recruit participants.Study Variables: Research variables: Level of knowledge regarding selected pediatric oncological emergencies.



Selection Criteria

- Inclusion criteria: Registered staff nurses at SMVMCH, irrespective of years of experience, willing to participate.
- Exclusion criteria: Nurses unavailable during data collection or not involved in pediatric care.

Development And Description Of Tool

- Section A: Demographic variables (age, gender, religion, residence, qualification, designation, years of experience, working hours, prior exposure to information/training).
- Section B: 30-item multiple-choice knowledge questionnaire. Each correct answer scored 1; total score categorized as inadequate, moderate, or adequate knowledge.

Data Analysis: Both descriptive (frequency, percentage, mean, SD) and inferential statistics (Chi-square test) were applied.

Results

Among 30 staff nurses, the majority (80%) were aged 20–30 years, while 20% were 31–40 years; none were above 40 years. Most participants were female (93.3%) and Hindu (96.7%); only one was Christian. More than half (53.3%) resided in rural areas, and the remainder (46.7%) in urban areas. All participants held a bachelor's degree in nursing; none had diploma or master's qualifications. Most were staff nurses (93.3%), with one ward in-charge and one ANS. Regarding work experience, 56.7% had 0–5 years, 40% had 5–15 years, and 3.3% had 16–25 years. A majority (90%) worked 6-hour shifts, and 10% worked 8-hour shifts. Only 20% reported prior information about pediatric oncological emergencies, and none had attended formal training.

Figure 1: Frequency and percentage wise distribution of demographic variables among staff nurses at SMVMCH. (N=30)

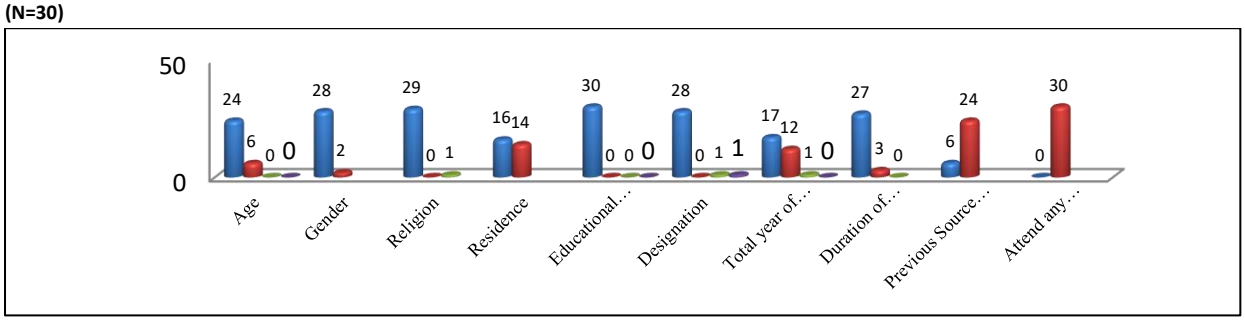


Figure 2: Percentage wise distribution of demographic variables among staff nurses

Among 30 staff nurses, 22 (44%) had inadequate knowledge, 8 (16%) had moderately adequate knowledge, and none demonstrated adequate knowledge regarding pediatric oncological emergencies. The mean knowledge score was 8.93 with a standard deviation of 4.09. Chi-square analysis showed no significant association between knowledge levels and demographic variables such as age, gender, education, experience, or prior training.

Discussion

The study revealed a substantial knowledge deficit among staff nurses regarding pediatric oncological emergencies. Despite basic nursing education, the majority lacked adequate preparedness to recognize and respond to emergencies like TLS, SVCS, and SCC. Only a small proportion demonstrated moderate knowledge, likely gained through limited clinical exposure.

The absence of significant associations with demographic variables indicates that this deficit spans across groups, highlighting the need for structured training rather than relying on experience alone. These findings align with prior studies emphasizing the role of continuing education in improving emergency preparedness among nurses.

Alruzaiza SA et al. (2020) conducted a cross-sectional study in Makkah, Saudi Arabia, to assess parents' knowledge, attitudes, and practices regarding pediatric emergency services. Using a self-administered KAP questionnaire, data were collected from 402 parents of children aged 0–15 years. The study found inadequate parental knowledge of alternative healthcare services and limited professional educational activities. Sociodemographic factors such as nationality, education, employment, relation to the child, and presence of chronic illness were significantly associated with knowledge, attitude, and practice levels. The authors recommended comprehensive parental education programs and policy strategies to reduce non-urgent use of emergency departments.

Conclusion

This study assessed the level of knowledge regarding selected pediatric oncological emergencies among staff nurses at SMVMCH, Puducherry. The findings revealed that the majority of nurses had inadequate knowledge, with only a few demonstrating moderate knowledge, and no significant associations were observed with demographic variables. These results highlight a critical gap in preparedness for managing pediatric oncological emergencies. Regular continuing nursing education (CNE) sessions, skill-based training, and periodic knowledge-updating programs are recommended to strengthen nurses' competence and improve the quality of pediatric oncology care.

Recommendations

a) A similar study could be conducted on a larger sample thereby findings can be generalized for a larger population. b) An exploratory study could be conducted to identify the knowledge and practices of staff nurses regarding management of Tumor Lysis Syndrome, Superior Vena Cava Syndrome, and Spinal Cord Compression.

c) A follow up study of structured teaching programme could be carried out to find the effectiveness in terms of retention of knowledge.

Reference

1. Gupta A, Sonbol MB, Patel K. Tumor lysis syndrome. JAMA Oncol. 2018 Jun;4(6):895-902.
2. Endalamaw A, Tadesse M, Alemnew B, Tegegne B, Habtewold TD. Prevalence of childhood cancer among children attending referral hospitals in Ethiopia. BMC Cancer. 2021;21:2-10.
3. Basavanthappa BT. Nursing research. 1st ed. New Delhi: Jaypee Publications; 1998. p.49-50.
4. Bhatia BD. Superior vena cava syndrome in children. Indian J Hematol Blood Transfus. 2014 Jul;30(1):28-30.
5. Haut C. Oncological emergencies in the pediatric intensive care unit. AACN Clin Issues. 2005 Apr-Jun;16(2):232-45.
6. Butter E. Recent progress in the treatment of cancer in children. Recent Prog Pediatr Cancer. 2021;1-18.
7. Jofiro G, Kebede A, Mamo G, Aklilu T. Prevalence and associated factors of pediatric emergency mortality at TikurAnbessa specialized tertiary hospital: a five-year retrospective study. BMC Pediatr. 2018;18:2-10.
8. Haut C. Oncological emergencies in paediatric intensive care unit. AACN Clin Issues. 2005 Apr-Jun;16(2):232-45.
9. Jalane A. Oncologic emergencies in pediatric patients: what oncology nurses need to know. Oncol Times. 2014 Apr 10;36(7):2-4.
10. Bertram LA. Pediatric oncology nurses' knowledge of safe administration of chemotherapy/biotherapy [dissertation]. Lexington (KY): University of Kentucky; 2015.