"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE (PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR."

BY

MS. PREMA.N

Dissertation submitted to the

Rajiv Gandhi University of Health Science, Bangalore, Karnataka

In partial fulfillment of the requirement of the degree of

MASTER OF SCIENCE IN NURSING

IN

CHILD HEALTH NURSING

UNDER PEDIATRIC NURSING

Dr.Lavanya Subhashini

Vice Principal &HOD Of pediatric Nursing

Pediatric Nursing Department

Sri Devaraj Urs College of Nursing

Tamaka, Kolar-563103

2023

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation/ **thesis "EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE (PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR."** is a bonafide and genuine research work carried out by me under the guidance of Dr. Lavanya Subhashini, Vice Principal and HOD of Child Health Nursing, Sri Devaraj Urs College of Nursing, Tamaka, Kolar.

Date: **Signature and Name of the candidate**

Place: Kolar (Prema.N)

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled **"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE(PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR.** " is a bonafide and genuine research work done by Ms. Prema.N in partial fulfillment of the requirement for the degree of Master of Science in Child Health Nursing.

Signature of the Guide

Dr.Lavanya Subhashini
Vice Principal& HOD
Child Health Nursing
Sri Devaraj Urs College of Nursing
Tamaka Kolar

Date:

Place: Tamaka, Kolar

ENDORSEMENT BY THE HOD AND PRINCIPAL

This is to certify that the dissertation entitled **"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE(PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR.** " is a bonafide research work done by Prema.N under the guidance of Dr.Lavanya Subhashini, Vice Principal and HOD of child health nursing, in partial fulfillment of the requirement for the degree of Master of Science in Pediatric Nursing.

Signature of the HOD

Dr. Lavanya Subhashini
Vice principal & HOD
Child Health Nursing
Sri Devaraj Urs College of Nursing
Tamaka, Kolar

Date:
Place: Tamaka, Kolar

Signature of the Principal

Dr.G. Vijayalakshmi
Professor and Principal
Sri Devaraj Urs College of Nursing
Tamaka, Kolar

Date:
Place: Tamaka, Kolar

COPY RIGHT

DECLARATION BY THE CANDIDATE

I hereby declare that the **Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka** shall have the right to preserve, use and disseminate this dissertation/Thesis in print or electronic format for academic/research purposes.

Date: **Signature of the candidate**

Place: Kolar (Prema.N)

ACKNOWLEDGEMENT

"Thank fullness is the beginning g of gratitude. Gratitude is the completion of thank fullness. Thank fullness may consist merely of words. Gratitude is shown in acts."

- Henri Frederic Amiel

The completion of this project not only gives me immense satisfaction after many Months of demanding efforts, but also provides me an opportunity to acknowledge those who helped along the way in completing the research work.

I am grateful to God Almighty for his strength, and wisdom bestowed upon me Throughout this endeavor and for the successful completion of this study.

I express my most profound sense of gratitude to my eminent and esteemed Research. Guide **Dr. Lavanya Subhashini** Sri Devaraj Urs College of nursing Tamaka, Kolar for giving her Valuable guidance, encouragement, co-operation, patience and untiring guidance offered. Through all ups and downs and above all for being a catalyst in the completion of the Study.

I sincerely thank thankful to the **Dr Zenath.C.J** CNO of RL Jalapa hospital and Research center.

I express my profound respect and deep gratitude to **Dr.G. Vijayayalakshmi,** Principal, Sri Devaraj Urs College of Nursing Tamaka, Kolar for her encouragement, Timely suggestion, and support for the study.

I sincerely thank **Dr. Krishnappa** Medical Superintendent, R.L.Jalappa Hospital and Research Centre for granting me permission to conduct this study. I

would like to express my gratitude to **Mrs. Punitha.M**, Professor and HOD of OBG Nursing, Class Coordinator, encouragement and valuable ideas that helped me from the initial stages of my study.

I would like to express my gratitude to **Dr Malathi .K.V,** Secretary of Research Committee and HOD of Community Health Nursing, for her encouragement and Valuable ideas that helped me from the initial stages of my study.

I express my sincere thanks to **Dr Lavanya Subhashini**, Chairperson of Research Committee & vice principal of Child Health Nursing for her support, valuable suggestions and cooperation, and guidance to carry out the study.

I would like to express my special gratitude to **Mrs.Sumalatha** Assistant Professor of Child Health Nursing for giving support, encouragement and valuable ideas that helped me throughout the study.

I express my sincere thanks to **Mrs. Saritha. V** Tutor Dept. of Child health Nursing of Sri Devaraj Urs College of nursing, Tamaka, Kolar for her valuable suggestions, encouragement and expert advice.

I express my sincere thanks to **Mr Mounappa** Tutor Dept. of Child health Nursing of Sri Devaraj Urs College of Nursing, Tamaka, Kolar for her valuable suggestions, Encouragement and expert advice.

I express my gratitude to all HODs and other M.Sc. Nursing faculty members of Sri Devaraj Urs College of Nursing for their guidance, support and valuable suggestions in completing the study.

I certainly owe special thanks to **Prof. Ravi Shankar** Biostatistician, for his Guidance and suggestions in statistical analysis.

I express my sincere thanks to all the subject experts for having their time for valuable judgment, constructive recommendations and enlightening suggestions while validating the content. My special word of thanks to the Librarians and Clerical Staff of Sri Devaraj Urs College of Nursing for their constant and timely help.

I express my sincere gratitude to the Study subjects who have given their Valuable time and co-operation by participation in the research study. My vocabulary falls short of right words to express my immense thanks to my father Mr Narayanaswamy. My mother rathnamma. My brother subramani SN. And other family members for their support, encouragement, prayers and motivation in completion of study.

I would like to thank my friends Mrs. Dorothy Dayan, Mrs. Rubin , Mrs. Munirathna, Ms. Nasreen Taj, Mr. Suresh, Mrs. prameela,Mrs, Mrs. Geetha, Mrs Uma, sunitha, and Mrs. Philomena. For their constant encouragement towards the successful completion of my study.

I extend my heartfelt gratitude to those who have contributed directly or indirectly For the successful completion of this dissertation. I thank the one above all of us, omnipresent God, for answering my prayers for giving me strength to plod on each and every phase of my life.

Thank you all

Date: Ms. Prema.N

Place: Kolar

ABSTRACT

Title: **"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE (PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR."**

BACKGROUND:

Worsening clinical condition in unwell children may be caused by a number of circumstances, but can often be prevented by prompt detection, treatment, or transfer to a better level of care. Reduced in complexity and requiring no training in patient subjective evaluation, the Pediatric Early Warning Score is a useful instrument. Our research aims to quantify PEWS among hospitalized children and examine its relationship to health outcomes.

OBJECTIVES OF THE STUDY

1. To assess the knowledge among staff nurses on Pediatric Early Warning Score by using structured knowledge questionnaire.

2. To assess the practice of staff nurses on assessment of Pediatric Early Warning Score by using observational check list.

3. To evaluate the Hands-on Skill training on Pediatric Early Warning Score assessment by comparing pre and post test score of knowledge and practice.

4. To determine the correlation between the knowledge and practice of staff nurses on Pediatric Early Warning Score.

5. To determine the association between post- test knowledge and practice score with socio selected socio demographic variables.

NULL HYPOTHESIS

$H0_1$: There will not be any significant difference in mean pretest and mean post test score on knowledge and practice among staff nurses regarding Pediatric Early Warning Score.

$H0_2$: There will not be any significant correlation between the mean knowledge score and practice scores among staff nurses regarding Pediatric Early Warning Score.

$H0_3$: There will not be any significant association between the posttest knowledge and practice score with selected socio demographic variable.

METHODOLOGY

In the present study, Pre-experimental with one group pre-test and posttest design was used for the study. The sample consists of 40 staff nurses who were selected by convenient sampling technique. The study was conducted in PICU at R.L Jalappa hospital Tamaka Kolar. The data collection tools used includes Structured Knowledge Questionnaire to assess knowledge on PEWS assessment among staff nurses and Observational Checklist form to observe the practice on assessment of PEWS among PICU admitted children's. The reliability and validity of the tool was established. After obtaining ethical clearance and permission from higher authorities of Hospital, the study was conducted. Before starting the data collection informed consent and patient information was taken. Self-administered questionnaire was given to assess the pretest followed by hands on skill training on PEWS. After one week post test was conducted by giving structured knowledge questionnaire and practice observed by

using observational checklist. Descriptive statistics and inferential statistics like paired t test, pearsons correlation and chi-square test was used.

RESULTS

The pre-test mean Knowledge score of staff nurses is 10± 2.42 and post mean score is 17.55± 1.61 which shows statistically significant difference between the pre and post mean Knowledge score.

The pre-test mean Practice Score of staff nurses is 6.52±1.21 and post mean score is 13.12±0.88 which shows statistically significant difference between the pre and post mean Practice score.

There is statistically no significant correlation(p=.55) between pre tset knowledge and pretest practice of staff nurses on Pediatric Early Warning Score.

CONCLUSION

Findings revealed that hands on skill training on PEWS was found to be effective in improving the knowledge and practice among staff nurses working in PICU

Key terms: Hands on Skill training, Pediatric Early Warning Score, Staff Nurses, Knowledge, Practice and PICU**.**

LIST OF ABBREVIATIONS

SL.NO	ABBREVIATIONS
1.	PICU:Pediatric intensive care unit
2.	PEWS: Pediatric Early Warning Score
3.	f :Frequency
4.	%:Percentage
5.	SD: Standard Deviation
6.	df: Degree of freedom
7.	NS: Not Significant
8.	SS:Statistically significant
9.	$H0_1$, $H0_2$ and $H0_3$Null hypothesis

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURES

CHAPTER-I

INTRODUCTION

Pediatric critical care remains one of the challenging aspects in the field of pediatrics. The pediatric intensive care unit (PICU), where critically ill pediatric patients who require advanced airway, respiratory, and hemodynamic supports are usually admitted with the aim of achieving a better outcome. With the advancement in intensive care facilities, there is a dramatic increase in survival of critically ill children. Childhood mortality is one of the good indicators of a country's health status of the population.[1]

Under-five mortality according to data provided by UNICEF is 39.4 deaths/1000 live births in 2018.[2]

Diarrheal diseases, pneumonia, and other infectious diseases are leading causes of death among the children below 5 years of age in developing countries like India.[3]

However, little is known about the causes of death in children after 5 years of age. Profile of mortality in PICU varies between different age groups. Evaluation of the mortality pattern can help in better decision-making, improving quality of care, and modifying future management. The early identification of patients at risk of clinical deterioration and matching the severity of illness to the appropriate level of care are integral components of high-quality medical care.[4]

A concept for identifying early signs of deterioration is the use of an early warning score tool that combines clinical parameters into a single score. The rationale for using early warning scoring systems is that signs of deterioration have been shown to be present and detectable in many patients several hours before undergoing a serious life-threatening event.[5]

Pediatric Early Warning Signs (PEWS) are clinical manifestations that indicate rapid deterioration in pediatric patients, infancy to adolescence. PEWS Score or PEWS System are objective assessment tools that incorporate the clinical manifestations that have the greatest impact on patient outcome.[6]

Pediatric Early Warning Signs (PEWS) are clinical manifestations that indicate rapid deterioration in pediatric patients, infancy to adolescence. PEWS Score or PEWS System are objective assessment tools that incorporate the clinical manifestations that have the greatest impact on patient outcome[7]

Patients with progressing critical illness can be predicted and prevented, but failure to identify the signs and lack of prompt intervention for patients developing acute and critical illness remain a problem. Care for them is challenging because children may be asymptomatic until critically ill. Pediatric patients have unique characteristics and different clinical parameters for each age group; adult parameters and concepts cannot be applied to the pediatric patient. Children have greater compensatory mechanisms than adults and can maintain a normal blood pressure despite considerable loss of fluid. For example, a child with sepsis or severe dehydration may seem unaffected and the acute condition is often identified only by the affected vital parameters. However, their condition deteriorates quickly once compensation mechanisms are overwhelmed. In one review, sixty-one percent of pediatric cardiac arrests were caused by respiratory failure and twenty-nine percent by shock, which are both preventable and potentially reversible causes. Thus, to ensure timely care for pediatric patients and improve outcomes, systemic assessment of key symptoms and their severity is essential. Pediatric Early Warning Score is a simple scoring system, that uses clinical parameters to identify hospitalized patients who can deteriorate further. A Pediatric 'Early Warning Score' is considered as patient safety

initiative which aims to monitar,detect and respond to signs of deterioration in hospitalized children in order to avert adverse outcome and premature death[8].

The knowledge on the manner in which pediatric early warning scoring system can be used limited. So, A reliable scoring system is very essential in this population. Monaghan in 2005 was the first to publish a report on the use of Pediatric Early Warning Score (PEWS).[9]

On reviewing the literature, various studies are available on the use of PEWS in the department of pediatric intensive care unit.[10]

The use of such PEWS is becoming widespread among western health systems. Studies have shown that PEWSs can be used to identify 80% of children at risk for deterioration, allowing for earlier intervention[11].

Pediatric nurses are responsible for monitoring and identifications of warning signs of deterioration. PEWS is a guiding path to identify clinical abnormalities, to prevent harm and to provide safety.[12]

NEED FOR THE STUDY

Children rarely communicate their problems verbally to health care team members and often clinical observations are missed out due to various reasons. When physiological instability is recognized early by the health care team, their timely action will reduce emergencies. Pediatric Early Warning Scores (PEWS) are increasingly being used for early identification of clinical deterioration in children admitted in pediatric wards.[13]

Despite the extensive literature discussing PEWS in the inpatient setting, there are limited published studies evaluating the utility of PEWS systems in the pediatric emergency department (ED). To date, there are two studies evaluating the ability of PEWS systems to predict which patients in the pediatric ED need admission to the intensive care unit (ICU).[13]

A recent study from a pediatric hospital in the Netherlands evaluated the validity of multiple PEWS scores. The authors tested the performance of ten different established PEWS in the ED, with the discriminate ability of each PEWS determined to be poor to moderate for predicting hospitalization and moderate to good for predicting ICU admission.[14]

The pediatric early warning score (PEWS) and the bedside pediatric early warning score (BPEWS) are validated tools that help determine the need for critical care in children with acute medical condition. Pediatric nurses are responsible for monitoring and identifications of warning signs of deterioration. PEWS is a guiding

path to identify clinical abnormalities, to prevent harm and to provide safety. In view of this, the study was undertaken.[14]

During the study there is no deterioration and re admission to PICU.

CHAPTER-II

OBJECTIVES

This chapter deals with the statement of the problem, objectives of the study, operational definitions, hypothesis, conceptual framework which provides a frame of reference of reference of study.

STATEMENT OF THE PROBLEM

"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar."

OBJECTIVES OF THE STUDY

1. To assess the knowledge among staff nurses on Pediatric Early Warning Score by using structured knowledge questionnaire.
2. To assess the practice of staff nurses on assessment of Pediatric Early Warning Score by using observational check list.
3. To evaluate the Hands-on Skill training on Pediatric Early Warning Score assessment by comparing pre and post test score of knowledge and practice.
4. To determine the correlation between the knowledge and practice of staff nurses on Pediatric Early Warning Score.
5. To determine the Association between posttest knowledge score and practice score with socio demographic variables.

NULL HYPOTHESES:

$H0_1$: There will not be any significant difference in mean pretest and mean post test score on knowledge and practice among staff nurses regarding Pediatric Early Warning Score.

$H0_2$: There will not be any significant correlation between the mean knowledge score and practice scores among staff nurses regarding Pediatric Early Warning Score.

$H0_3$: There will not be any significant association between the post test knowledge and post- test practice with selected socio demographic variables.

OPERATIONAL DEFINITIONS:

EFFECTIVENESS:

In this study, it refers to the extent to which the Enhanced Hands on skill have improved the pre experimental one group with pretest posttest knowledge and practice score among staff nurses, which will be assessed by using structured knowledge questionnaire and practice observational checklist.

ENHANCED HANDS ON SKILL:

It refers to systematically planned lecture cum demonstration and hands on skills with regard to assessment of pediatric early warning score among children admitted to PICU which will be delivered to staff nurses for 45 min duration.

ASSESSMENT:

It refers to assessment of vital signs among children admitted to pediatric intensive care unit aged 2months to 18 years.

PATIENT OUTCOME:

Refers to the length of PICU stay and the incident of clinical deterioration.

STAFF NURSES:

Refers to registered staff nurses working in pediatric intensive care unit.

CONCEPTUAL FRAMEWORK

A theory is set of concepts, definitions, relationships, and assumptions that project systemic views of a phenomenon.

The current study aims at evaluating the **"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar."**

Conceptual framework refers to the interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. The present study is aimed at assessing the Pediatric Early Warning score.

The conceptual framework of this study is based on Context, Input, Process and Product (CIPP) model on evaluation developed by Daniel Stufflebeam (2003). It aims to provide an analytic and rational basis for programme decision making based on the cycle of planning, structuring, implementing and reviewing and revising decisions. Each examined through a different aspect of evaluation-Context, Input, and

Process and Product evaluation. CIPP model provides a comprehensive systematic continuous ongoing framework for programme evaluation.[15]

Concepts of Stufflebeam Evaluation

- Context evaluation
- Input evaluation
- Process evaluation
- Product evaluation

Context evaluation

It highlights the environment in which the proposed programme exists. It assesses the needs, problems, opportunities, basis for defining goals, priorities and objectives. It helps in making programme planning decisions.

Based on findings of other studies and related literature, it is assumed that Pediatric Early Warning score .

Input Evaluation

Input evaluation involves steps and resources needed to meet the goals and objectives. It serves as a basis for structuring decisions. In the present study input refers to the

- Framing a Research Design
- Establishment of reliability of tool
- Selection of sample
- Performing hands-on skill training among staff nurses

Process Evaluation

It involves the implementation of plans to guide activities and later to explain outcome. In the present study it refers to

- Assessing the PEWS
- Performing hands-on skill training among staff nurses
- Assessing the PEWS after hands on skill training

Product Evaluation

It helps to identify both intended and unintended outcome to keep the process on track and comparing them anticipated outcome. It can be decided if the programme should be continued, modified or dropped altogether. In this study product evaluation refers to

- Finding the correlation between the knowledge and practice of staff nurses on pediatric early warning score.

The step of the model further leads to recycling decisions and need for modification to terminate which is not in the preview of this study.

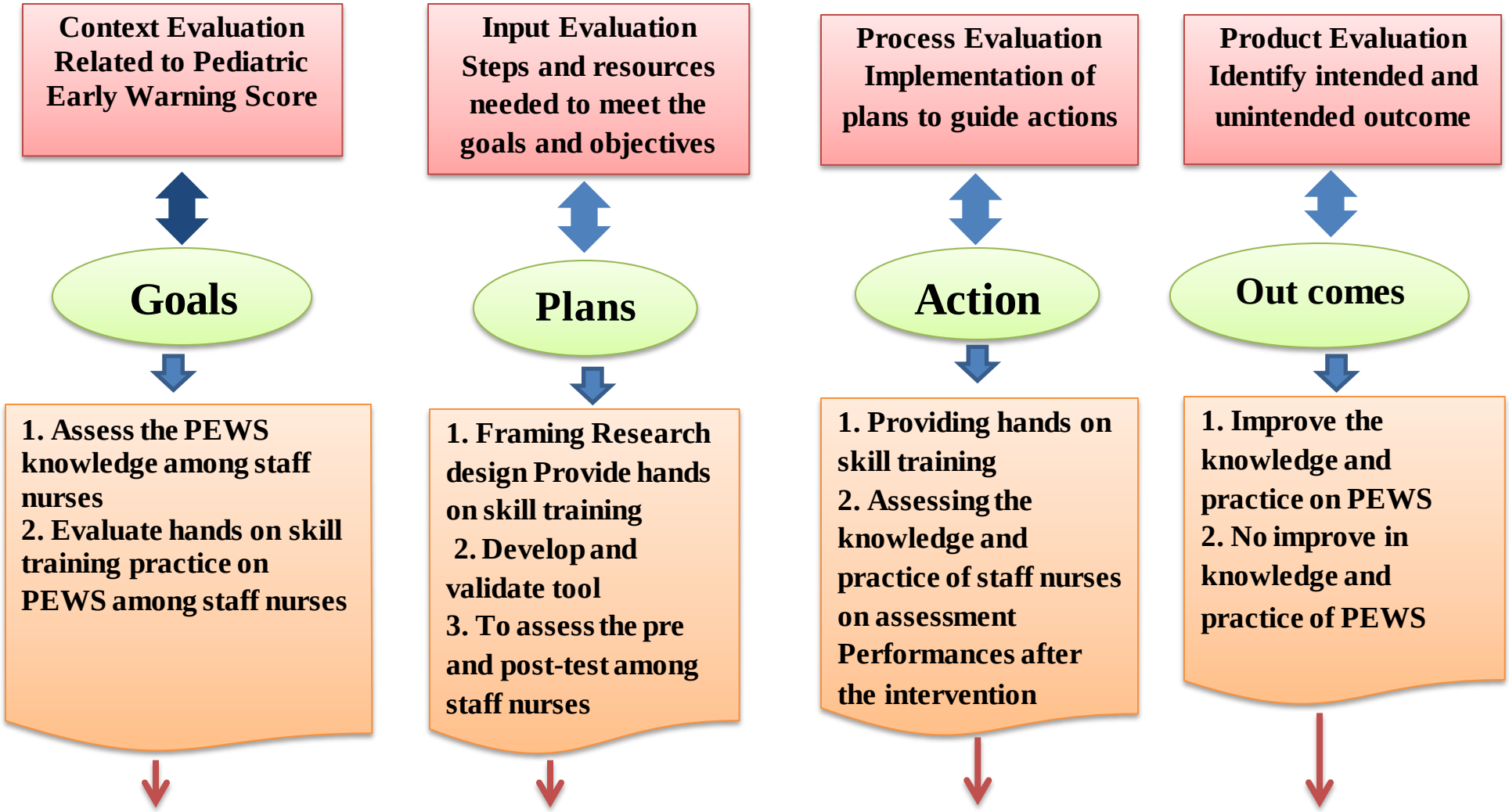


Fig.1 Conceptual Frame work to evaluate the effectiveness of enhanced hands-on skill in implementation of pediatric early warning score among staff nurses

CHAPTER - III

REVIEW OF LITERATURE

Review of literature makes the research familiar with the existing studies and provides information which helps to focus on a particular problem and lays a foundation upon which to base a new knowledge.

The Review of Literature for the present study is categorized under the following headings.

1. Studies related to Pediatric Early Warning Score (PEWS) score assessment.
2. Studies related to Hands on skill in implementation of Pediatric Early Warning Score (PEWS**).**

1.Studies related to pediatric Early Warning Score (PEWS) score assessment.

A Descriptive cross- sectional study was conducted to evaluate the use of a pediatric early warning (PEWS) score in Dutch general and university hospital,4 years after the introduction of a national safety program. An electronic cross-sectional survey was used. All general and university hospital (n=91) with a pediatric department in the Netherland were included in the study. The response rate was 100% The study recommended to establish a national working group to coordinate the development, validation, and implementation of wide safety program and a PEWS usable for both general and university hospital.[16]

A retrospective observational study in the Emergency Department of an urban district hospital in Rotterdam, the Netherlands. Patients< 16 years attending the Emergency Department with an internal medical problem were included. Immediate intensive

care unit admission was used as a measure for critically each ill children. During the study period 2980 children attended the Emergency Department, ten (0.4%) of them required immediate intensive care unit admission. The modified pediatric early warning score can identify critically ill children in the general pediatric Emergency Department population (area under the ROC cure 0.82). A sensitivity of 80% and specificity of 80% show potential to rule out critical illness in children visiting the Emergency Department when those results are validated in the larger population.[17]

A descriptive, cross-sectional study used on electronic survey with 35 nurses and 17 physicians. The purpose was to explore nurses' and physicians recognition of signs of deterioration and management of symptoms in toranto hospital for sick children. Results have shown that nurses using the bed side pediatric early warning system (bedside PEWS) were significantly more likely to recognize risk for deterioration and respond with appropriate interventions. Physicians incorporating bedside PEWS were more likely to choose reliable indicators of deterioration .The study concluded that bedside. PEWS may improve nurses' and physicians 'abilities to recognize early sings of patient deterioration, communication findings to providers, and plan interventions.[18]

Pediatric Early Warning Score was implemented in Resource-Limited Setting (PEWS) with nurses in a rural district hospital in Rwanda. Before implementation, nurses reported feeling unprepared to identify and advocate for acutely ill patients owing to a lack of skills, vocabulary. Although PEW scores can improve clinical outcomes, empowering nurses in resource-limited setting to discuss patient acuity

with physicians was a critical first step, the primary aims were to train nurses to obtain more accurate vital signs and assess their importance as early warning signs of clinical deterioration and use PEW scores to improve communication between nurses and physicians. The PEWS tool implementation began with a training program that was created through discussions with nurses, physicians, and the medical director of the hospital. The program included lectures and application of learned skills through direct clinical mentorship of nurses as well as training of physicians regarding PEWS as a communication tool. A PEWS protocol was evaluated based on pre-and post-tests to assess improvement in nurses' knowledge and skill, as well as skills assessment of accurate recognition of clinical deterioration. All 6 nurses passed skill testing with >80% accuracy. Nurses feelings of empowerment to advocate for patients and to escalate care were assessed through pre-and post-training interviews. Nurses described increased confidence in calling for physician support. Implementation of PEW score increased nurses' technical skill and feelings of confidence and empowerment; however, the low –resource setting presented major challenges. Barriers to sustainable implementation included the rapid ward staff turnover as well as limited physician buy in Nevertheless, the PEWS tool has the potential to empower nurses and improve patient outcomes is fully embraced by staff.[19]

A written post course survey was conducted to describe the development of the RESPOND (Recognizing, Signs of Pediatric hospital in patient Deterioration) course by 65 participants (junior doctors, medical students, nurses and health care assistants) immediately after the course and an electronic survey completed three months later in a large children's hospital in the North West of England. Data were analyzed

descriptive and by simple thematic analysis of free text response. The study finding have shown a reduction in hospital cardiac arrest rate.[20]

A quasi experimental design was conducted at pediatric intensive care unit in Benha University hospital and Benha specialized pediatric hospital to evaluate the effect of educational program on improving nurses' performance regarding arterial blood gases sampling for critically ill children. There was a highly statistical significant difference in nurses' knowledge and practice regarding arterial blood gases sampling before and program implementation. The study recommended that the continues training and evaluating should be provided to all nurses involved in arterial blood gases sampling in order to update their knowledge and ensure competent practice.[21]

A prospective pre –post interventional study was conducted on 23 critical care pediatric nurse practitioners to determine the effectiveness of simulation –based training on leadership in acutely critical situation knowledge tests, time-to-task, and a follow-up survey were used to determine the effectiveness of the training. Critical care pediatric nurse practioners improved their knowledge score by 27 %(pretest: 35.2% [standard deviation =12.1%];post-test :62.2%[standard deviation =13.8%],p<.001).simulation-based training is an effective strategy for educating critical care pediatric nurses practitioners and improves and their ability to manage pediatric emergencies rapidly, which can be lifesaving.[22]

A cross-sectional study design was conducted to assess the knowledge, attitude, and practice among (142)nurses and doctors regarding the pediatric Early warning signs

(PEWS) system, in a pediatric ward at a tertiary care hospital in Karachi, Pakistan. The findings of the study revealed that out of 142 study participants, participants had a low level of knowledge yet positive attitude towards the PEWS system. Despite having a low level of knowledge, the participants had a positive attitude towards PEWS to enhance their PEWS knowledge and practices.[23]

A retrospective study was conducted of 100 consecutive children. The objective of the study was an effort to consistently assess patient acuity and the impact of our team's interventions, we instituted a modified "transport PEWS" (TPEWS). Eighty-six patients were transported by ground. Sixty patients (60%) received some intervention from the transport team. Median TPEWS was 3 (0–9) upon initial assessment, and TPEWS was 2 (0–9) on arrival at the accepting facility (P = 0.0001). Seventy-three percent (73/100) of patients were transported to the emergency room; 15 (15%) of 100 to the general inpatient area, and 12 (12%) of 100 to the intensive care unit. In addition, a triage TPEWS (TPEWS) was calculated from information given from the referring facility in 59 of the 100 patients. A significant difference in TPEWS and TPEWS was noted (P = 0.0001).The study concluded that, TPEWS appears to be a helpful additional assessment tool. Transport PEWS may function as a tool for assessing severity of illness, hence optimizing transport dispatch and patient disposition.[24]

A retrospective study was carried out to examine the relationship between a modified version of The Brighton Pediatric Early Warning Score (PEWS) and patient characteristics in a Norwegian department of pediatric and adolescent medicine. The medical records of patients referred for acute care from March to May 2011 were

retrospectively reviewed. Children with a PEWS ≥3 were compared to children with a PEWS 0–2 with regard to age, diagnostic group and indicators of severe disease. A total of 761 patients (0−18 years of age) were included in the analysis. A younger age and diagnostic groups such as lower airway and cardiovascular disease were associated with PEWS ≥3. Upper airway disease and minor injury were more frequent in patients with PEWS 0−2. Children with PEWS ≥3 received fluid resuscitation, intravenous antibiotics, and oxygen supplementation, and were transferred to a higher level of care more often than children with PEWS 0−2. The study concluded that PEWS ≥3 was associated with severe illnesses and surrogate markers of cardio-respiratory compromise. Patients with PEWS ≥3 should be carefully monitored to prevent further deterioration.[25]

A retrospective cohort study was conducted for the purpose to determine the accuracy of recorded PEWS scores, assess clinical reasons for transfer, and describe the monitoring practices prior to PICU transfer involving acute decompensation. Patients ≤21 years of age transferred emergently from the acute care pediatric floor to the PICU due to clinical deterioration over an 8-year period. Clinical charts were abstracted to (1) determine the clinical reason for transfer, (2) quantify the frequency of physiological monitoring prior to transfer, and (3) assess the timing and accuracy of the PEWS scores 24 hours prior to transfer. Results shows that during the 8-year period, 72 children and adolescents had an emergent PICU transfer due to clinical deterioration, most often due to acute respiratory distress. Only 35% (25/72) of the sample was on continuous telemetry or pulse oximetry monitoring prior to the transfer event, and 47% (34/72) had at least one incorrectly documented PEWS score in the 24 hours prior to the event, with a score underreporting the actual severity of illness. The study concluded that this analysis provides support for the routine assessment of

clinical deterioration and advocates for more research focused on the use and utility of continuous cardiorespiratory monitoring for patients at risk for emergent transfer.[26]

A Prospective observational study was conducted with a convenience sample of patients aged 0 to 21 years in the ED of an urban, tertiary care children's hospital. The objective of this study was to determine the association between the Pediatric Early Warning Score (PEWS) at time of emergency department (ED) disposition and level of care. Pediatric Early Warning Score data were obtained at time of ED disposition, and the disposition decision was collected from the electronic medical record. Multinomial logistic regression was used to determine the association between PEWS and disposition. The sample of 383 patients included 239 (62%) who were discharged, 126 (33%) admitted to acute care, and 18 (5%) admitted to intensive care. Assigned scores ranged from 0 to 9. Adjusting for triage level, a 1-point increase in PEWS increased the odds of acute care admission 48% relative to the odds of discharge (odds ratio, 1.48; 95% confidence interval, 1.25–1.76) and increased the odds of intensive care admission 41% relative to the odds of acute care admission (odds ratio, 1.41; 95% confidence interval, 1.13–1.76). Pediatric Early Warning Score of 1 or more had maximum discriminant ability for admission, and PEWS of 3 or greater had maximum discriminant ability for intensive care. Area under the receiver operator characteristic curve was 0.68 to detect need for admission for the entire sample and 0.80 among the 97 patients with respiratory complaints. The study concluded that Pediatric Early Warning Score is associated with the level of care at ED disposition but does not provide adequate sensitivity and specificity to be used in isolation. Performance characteristics are better for patients with respiratory complaints.[27]

A prospective 12-month observational study of patients, aged 0 to 21 years, admitted from the ED of an urban, tertiary care children's hospital.). The goal of this study was to explore the test characteristics of an ED-assigned PEWS score for intensive care unit (ICU) admission or clinical deterioration in admitted patients. . ED nurses were instructed in PEWS assignment and electronic medical record (EMR) documentation. Interrater reliability between nurses was evaluated. PEWS scores were measured at initial assessment (P_0) and time of admission (P_1). Patients were stratified into outcome groups: those admitted to the ICU either from the ED or as transfers from the floor and those admitted to the floor only. Clinical deterioration was defined as transfer to the ICU within 6 hours or within 6 to 24 hours of admission. PEWS scores and receiver operating characteristic (ROC) curves were compared for patients admitted to the floor, ICU, and with clinical deterioration. The authors evaluated 12,306 consecutively admitted patients, with 99% having a PEWS documented in the EMR. Interrater reliability was excellent (intraclass coefficient = 0.91). A total of 1,300 (10.6%) patients were admitted to the ICU and 11,066 (89.4%) were admitted to the floor. PEWS scores were higher for patients in the ICU group (P_0 = 2.8, SD ± 2.4; P_1 = 3.2, SD ± 2.4; $p < 0.0001$) versus floor patients (P_0 = 0.7, SD ± 1.2; P_1 = 0.5, SD ± 0.9; $p < 0.0001$). The study found that an elevated PEWS is associated with need for ICU admission directly from the ED and as a transfer, but lacks the necessary test characteristics to be used independently in the ED environment.[28]

2. Studies related to Hands on skill in implementation of Pediatric Early Warning Score (PEWS).

Multiple case study approach of four wards in two hospitals in Northern Ireland was conducted to test the Rapid Response Systems programme theory against actual practice components of the Rapid Response Systems implemented to identify those contexts and mechanisms which have an impact on the successful achievement of desired outcomes in practice. We used various mixed methods including individual and focus group interviews, observation of nursing practice between and document analysis of Early Warning Systems audit data and hospital acute care training records. Results show that A cross-case analysis highlighted similar patterns of factors which enabled or constrained successful recognition, referral and response to deteriorating patients in practice. The study concluded that Successful implementation of Rapid Response Systems was dependent on adopting organizational and cultural changes that facilitated staff empowerment, flexible implementation of protocols and ongoing experiential learning.[29]

An exploratory qualitative design was chosen using focus group interviews to gain a deeper understanding of nurses' experiences with PEWS. The aim of this study was to gain knowledge about nurses' experiences with PEWS and to highlight factors facilitating and impeding the use of PEWS tools in clinical practice. Pediatric early warning score (PEWS) systems are used to monitor pediatric patients' vital signs and facilitate the treatment of patients at risk of deteriorating. A total of five focus group interviews were conducted at three hospitals, and a qualitative meaning condensation analysis as described by Kvale and Brinkmann was performed. Results shows that i) lack of interdisciplinary awareness, ii) clinical judgment and PEWS a multi-faceted

approach, iii) PEWS supports a professional language, iv) monitoring the patient's a challenge, v) PEWS helps to visualize the need for escalating care, vi) an inflexible and challenging tool, and vii) supportive tools enhance the nurses' experiences of PEWS positively. Study concluded that Our findings suggest that attention should be given to nurses' perceptions of how both clinical judgment and PEWS should be seen as essential in providing nurses with information about the patients' conditions. If not, the risk of failing to recognize patients' deteriorating conditions will remain as this can have an impeding influence on nurses' use of PEWS. From the nurses' perspective, medical doctors seemed unaware of their role in using PEWS.[30]

A prospective, descriptive study design was used. The present study evaluated the use of the Pediatric Early Warning Score (PEWS) for detecting clinical deterioration among hospitalized children. The tool was used to score 2,979 patients admitted to a single medical unit of a pediatric hospital over a 12-month period. Registered nurses (RNs) were trained in the use of PEWS through learning modules and case studies. PEWS became a standard component of the assessment conducted every 4 hr on all patients admitted to the unit. Bedside RNs documented PEWS in patients' electronic patient records every 4 hr for the duration of the patient's admission. A tool was developed to collect data on all of the PEWS obtained during the 1-year period. The charge nurse for each shift recorded all PEWS for the patients on the unit. Results shows that Patients were admitted to the general care inpatient unit for a variety of diagnoses, the most common being asthma exacerbation, bronchiolitis, and pneumonia. Of the 2,979 patients studied, 51 children were transferred to the PICU for clinical care, representing a rate of PICU transfer of 1.8%. There was a relationship between PEWS and the likelihood of PICU transfer, with higher PEWS being associated with increased likelihood of PICU transfer. In

conclusion, the present study suggests that the PEWS tool provides highly reliable and valid clinical scoring data. High PEWS are predictive of patients who will require transfer to the PICU.[31]

A cross-sectional study was conducted to develop and validate heart and respiratory rate percentile curves for hospitalized children and compare their vital sign distributions to textbook reference ranges and pediatric early warning score (EWS) parameters. The study used 6 months of nurse-documented heart and respiratory rates from the electronic records of 14 014 children on general medical and surgical wards at 2 tertiary-care children's hospitals. Results show that Up to 54% of heart rate observations and up to 40% of respiratory rate observations in our sample were outside textbook reference ranges. Up to 38% of heart rate observations and up to 30% of respiratory rate observations in our sample would have resulted in increased EWSs. Study concluded that A high proportion of vital signs among hospitalized children would be considered out of range according to existing reference ranges and pediatric EWSs.[32]

A case-control design was used to evaluate 11 candidate items and identify a pragmatic score for routine bedside use. Case-patients were urgently admitted to the intensive care unit (ICU). Control-patients had no 'code blue', ICU admission or care restrictions. Validation was performed using two prospectively collected datasets. Data from 60 case and 120 control-patients was obtained. Four out of eleven candidate-items were removed. The seven-item Bedside Pediatric Early Warning System (PEWS) score ranges from 0–26. The mean maximum scores were 10.1 in case-patients and 3.4 in control-patients. At a score of 8 the sensitivity and specificity

were 82% and 93%, respectively. The score increased over 24 hours preceding urgent pediatric intensive care unit (PICU) admission ($P < 0.0001$). The study concluded that we developed and performed the initial validation of the Bedside PEWS score. This 7-item score can quantify severity of illness in hospitalized children and identify critically ill children with at least one hour's notice.[33]

Retrospective study was conducted for detection of deterioration in clinical condition. In this study the cases were patients transferred to the pediatric intensive care unit (PICU), and controls were those not transferred to the PICU. The maximum PEWS score in both groups were analyzed using Mann–Whitney *U* test and receiver operating characteristic curve (ROC). The study population included 100 cases and 250 controls. The length of hospital stay (18.09 ± 32 vs 3.93 ± 2.9 days; $P < .001$) and the maximum PEWS score (2.95 ± 1.5 vs 1.4 ± 0.8) were significantly higher for the cases ($P < .0001$). The PEWS score area under the ROC was 0.81 (95% confidence interval = 0.75-0.86). The sensitivity and specificity for a score 2.5 were 62% and 89%, respectively. The use of the modified PEWS score can help identify patients on wards who are at risk for deterioration.[34]

Ramteke et al., observed children admitted to the PICU prospectively, and their PEWS scores in the behavioral, respiratory, and cardiovascular domains were determined at zero hours after admission. According to the results of the research, differing PEWS scores allow for more accurate mortality predictions. Patients admitted with a PEWS score of 8 had a 100% death rate. A statistically significant relationship exists between the variables, as shown by the odds ratio of 3.34 and the P value of $P < 0.0001$ from the logistic regression study. At a PEWS Score of 3,

specificity was 92.0%, and at a PEWS Score of 7, it dropped to 54.5%. At a PEWS level of 3, sensitivity was 31.28%, whereas at a score of 7, it was 99.05%.[35]

Chaiyakulsil et al., found AUCs of 0.73, 0.98, and 0.71 for predicting overall admission, to ICU, and to general ward‖ admission, respectively, in a research validating PEWS in predicting hospitalization in children attending the ED. With a cutoff of PEWS ≥ 3, the sensitivity and specificity for predicting ICU admission were 100% and 91% respectively. When predicting ward admission with a cutoff of PEWS ≥ 1, the sensitivity and specificity were 77% and 59%, respectively. As a result of their findings, they concluded that PEWS has the has the potential to serve as a reliable screening tool‖ for determining if a patient needs to be admitted to the ICU in pediatric EDs and is useful in evaluating patient status with acceptable validity.[36]

Retrospective cohort research to evaluate the reliability of PEWS scores found that in over 20% of instances, no PEWS was recorded and in over 50% of those recorded, the score was underscored, hence failing to account for the whole potential for worsening in the child's condition. Conclusions from the study supported the need for routine assessment of clinical worsening, and the authors urged for further research into the use and effectiveness of continuous cardio-respiratory monitoring‖ for patients at risk for emergent transfer.[37]

Retrospective cohort study was conducted for the study "The Children's Hospital Early Warning Score‖ (CHEWS) and the PEWS were validated and compared in a for early identification of catastrophic worsening clinical condition in hospitalized, children suffering from non-cardiac issues. When comparing the two systems, CHEWS was shown to be superior than PEWS in identifying those with a danger of worsening critical condition thanks to its improved discrimination,

sensitivity, and early warning time. Detecting patients who are at danger requires a high level of sensitivity, but early warning scores also need to be precise enough to avoid wasting resources on false positives. When comparing CHEWS and PEWS, the ―sensitivity of crucial scores (≥5) ‖ was much greater for CHEWS (75.6%) compared to PEWS (38.9%). As a result, there is cause for alarm that children at highest risk of catastrophic worsening clinical condition may go undetected since ―critical PEWS‖ are not very sensitive.[38]

A cross-sectional study was conducted to evaluate the Brighton PEWS‖ (B-PEWS) for predicting worsening clinical condition among children admitted at a children's hospital; found that PEWS ≥ 4 had sufficient sensitivity, specificity, and negative predictive value‖; This observation is consistent with the low rate of documented clinical deterioration in B-PEWS values of ≤ 3.[39]

Prospective, descriptive, observational study was aimed to validate Thammasat Pediatric Early Warning Scores (TPEWS) in the prediction of unanticipated PICU admission. Children from 1 month to 15 years old who were admitted to the general pediatric wards were included. Scoring was conducted by nurses every 4 hours. To ensure the good-inter-rater reliability among nurses, the first 20 scorings were performed by two nurses and Cronbach's alpha analysis was performed. Children who were admitted to PICU for elective procedures were excluded. Validity was analyzed using area under the receiver operating characteristics (ROC) curves, sensitivity, specificity, positive and negative predictive value. Results shows that a total of 242 children were included for analysis. The mean age was 3.78 ± 7.80 years and 53.3% were male. Initial phase revealed excellent inter-rater reliability (Cronbach's alpha = 0.934). Thirteen children (5.4%) were transferred

to PICU. The area under ROC curve for predicting PICU admission was 0.965 (95% CI: 0.927-1). Sensitivity and specificity for PICU admission using a cut-off value of > 4 were 92.3% and 89.1%, respectively. Positive predictive value and negative predictive values were 32.4% and 99.5%, respectively. Study concluded that TPEWS is a novel, simple scoring system that demonstrates high sensitivity and specificity for categorizing clinical deterioration in patients at risk for PICU admission.[40]

CHAPTER-IV

METHODOLOGY

The study's components are arranged according to the research methodology in a way that most likely to result in a solution to the sub problems that have been posed.

This chapter deals with the methodology of the present study and it includes research approach, research design, setting sample and sampling technique, development and description of the instrument, data collection and plan for data analysis.

RESEARCH APPROACH

Research approach is the basis procedure for the research enquiry. This approach helps researcher to determine what data to collect and how to analysis it.[41]

Quantitative research approach is considered appropriate for the present study

RESEARCH DESIGN

A research design is an investigation overall plan for obtaining the answer to the research questions.

For the present study Pre experimental with one group pre-test and post- test design was used.

GROUP	PRE-TEST	INTERVENTION	POST TEST
	0_1	X	0_2
	Knowledge and Practice of Staff Nurses	Hands on skill training programme	Knowledge and Practice of Staff Nurses

0_1- Pretest Knowledge and Practice of Staff Nurses

0_2-Post-test knowledge and practice of Staff Nurses

0_3- Hands on skill taraing programme on PEWS

VARIABLES

Dependent Variable

The dependent variable is the variable the researcher is interested in understanding, and explaining.

In this study it refers to the knowledge and Practice of Staff Nurses on Pediatric Early Warning Score.

Independent Variable

Independent variable is the variable that stands alone and does not depend on any other. In this study independent variable is Hands on skill on Pediatric Early Warning Score.

SETTING OF THE STUDY

Setting refers to the area where the study was conducted.

The study was conducted in Pediatric Intensive Care Unit of RL. Jalapa Hospital and Research center, Tamaka Kolar. RLJH is a multiple-specialty Hospital with 1200 bed strength. It has well equipped Pediatric Intensive Care Unit (PICU) with 10 bedded and also lifesaving equipment, and availability of health care persons round the clock.

POPULATION

The population referred as the target population, which represent the entire group or all the elements like individuals or objects that meet certain criteria for inclusion in the study

In the present study, population consists of staff nurses who are working in Pediatric Intensive care unit.

SAMPLE AND SAMPLE SIZE

The sample may be defined as representative unit of target population, which is to be worked upon by researcher during their study.

In this study, sample consists of Staff Nurses working in Pediatric Intensive Care Unit at RLJH& RC.

For the present study 40 staff nurses were included.

SAMPLING TECHNIQUE

Sampling technique is the process of selecting a portion of the population to represent the entire population. For the present study convenient sampling technique was used to select the sample.

SAMPLING CRITERIA

INCLUSION CRITERIA

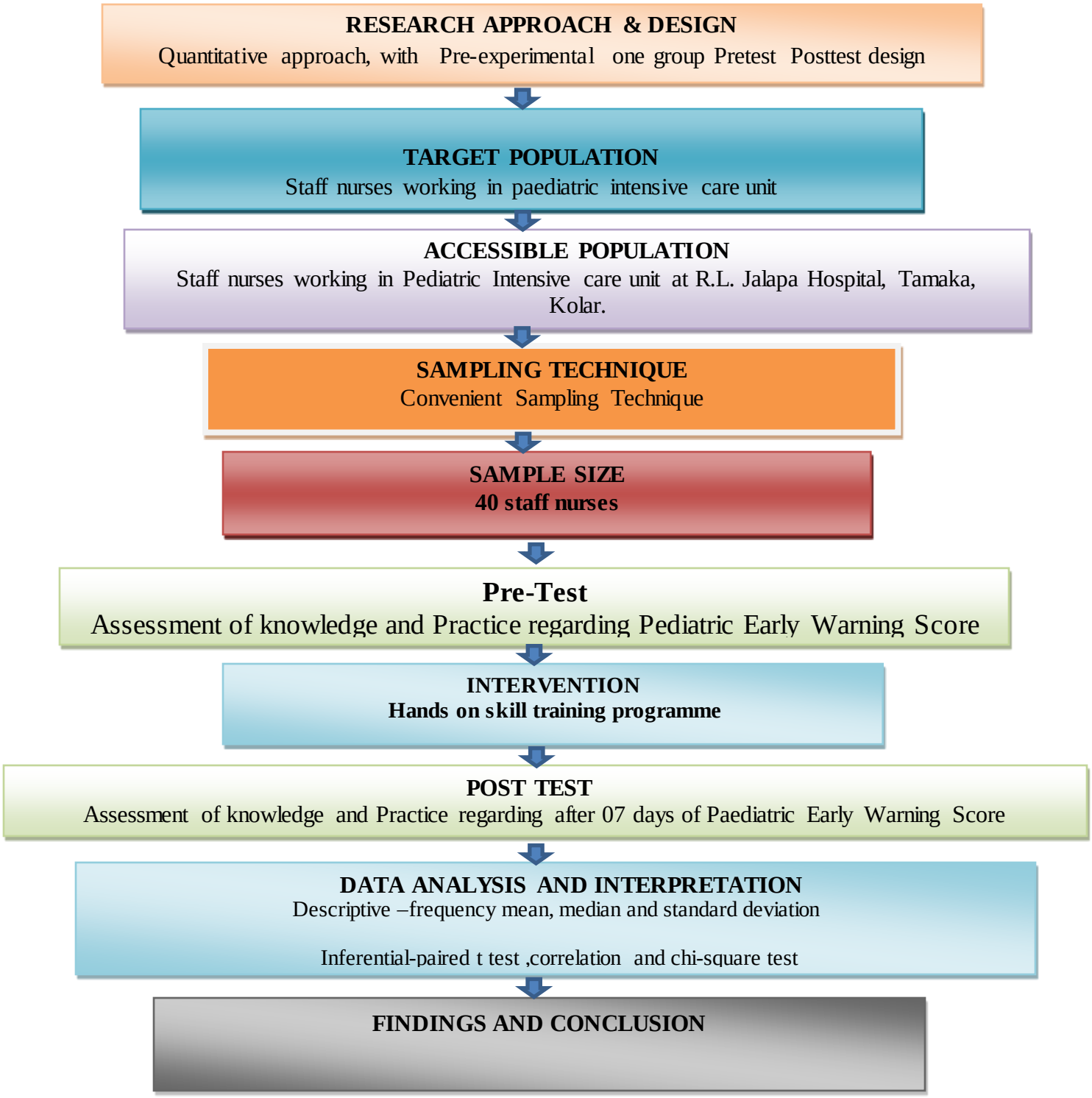
All staff nurses

1. Working in PICU with minimum of 3 months of experience.
2. Willing to participate in the study.

EXCLUSION CRITERIA:

Staff nurses not available during time of data collection

FIG: 2 SCHEMATIC REPRESENTATION OF RESEARCH



SELECTION AND DEVELPOMENT OF THE TOOL:

Data collection tool is the procedure of instrument used by the researcher to observe or measure the key variables in the research problem.

Data collection tool used in this study consists of two sections.

Section-A: Socio demographic variables

It consists of Age, Gender, Marital status, Educational status, and work experience

Section-B:

It consists of Structured Knowledge Questionnaire on Pediatric Early Warning Score with 20 items. The questions were of the multiple –choice type, the total score was 20, each correct response carry "score 1" and incorrect response carry "zero".

Knowledge score Assessment

Adequate knowledge :(above 15)-above75%

Average knowledge :(10 to 15)- between 50-75%

Inadequate knowledge :(< 10 score) - below 50%

Section -C: Observational checklist

Total items are 15 with maximum score 15 each correct response will be 1 mark. And incorrect response zero.

Good Practice :(above 12)-above75%

Average Practice :(7 to 12 score)- between 50-75%

Poor Practice :(< 7 score) - below 50%

Section- D: Patient outcome

Length of child stay in hospital and any incidence of deterioration during PICU stay.

Techniques- Interview technique with self-administer questionnaire for knowledge which took 10 minutes time

Observational Technique: The practice of nurses with regard to hands on skill on assessment of PEWS was assessed by using observational checklist on PEWS at the time of admission to PICU.

Study tool: Pediatric Early Warning Score

PEWS consist of 6 variables with possible score on each variable of 0 & 1, and a cumulative score between 0 & 6.

CONTENT VALIDITY OF THE TOOL

Content validity for structured knowledge questionnaire was ascertained by seven experts three from medical, three from nursing and one statistician. The experts were requested to validate the questionnaire in terms of very relevant, relevant, needs modification and not relevant .After the experts opinion, language of some of the items was simplified.

ITEM ANAYSIS

According to Gilbert (1991) a question with difficulty index between 30% to 70% is acceptable. The question with a discriminating value more than 0.25-0.35 is considered as good question. For present study, the tool was analyzed for difficulty

index and discriminating value. The items having difficulty index between 30%-70% and the discriminating value above 0.25-3.5 were retained. For items whose difficulty index was above 30% and discriminating value above 0.25 were selected. At final after reliability, validity and items analysis, 2 questions were deleted and retained with 20 questions.

RELIABLITY OF THE TOOL

The reliability of the strtured knowledge questionnaire on 20 items was assessed using Kuder Richardson Formula 20 (KR .20) on 10 subjects

KR.20 is a measure of internal consistency. A high KR-20 coefficient indicates a homogeneous test. The test retest reliability was done within a gap of 07 days to assess the stability of the tool. The persons's correlation was done to assess the reliability of tool. The obtained value of reliability r=0.9.

ETHICAL CLEARANCE

Before conducting the study, the ethical clearance was obtained from the Institutional Ethics Committee (IEC) of Sri Devaraj Ur's college of Nursing, Tamaka, Kolar.

PILOT STUDY

Pilot study is a small-scale version of trail run of the major study (Polit and Hungler1999). The purpose of pilot study was to find out the feasibility of conducting the final study in terms of time, sample availability and co-operation from the study participants and also in terms of statistical analysis.

The pilot study was conducted in SNR Hospital at Kolar from 13-06-2023 to 19-06-2023. The result showed that there was a significant increase in the mean knowledge

score (12.8) Staff nurses (5.5). Hence Hands on structure teaching skill taraing programme was found to be effective in increasing the knowledge score among staff nurses.

The pilot study concluded that the study was feasible to conduct main study.

DATA COLLECTION PROCEDURE

The data was collected from 11/7/23 to 18/7/23 in the following steps

1. Pre intervention phase:

- Ethical clearance was obtained from the Institutional Ethics Committee (IEC) of Sri Devaraj Urs College of Nursing.
- A formal written permission was obtained from the medical superintended of RLJH RC Tamaka Kolar.
- By using convenient sampling 40 staff nurses was selected.
- On the day Data collection the structure knowledge questionnaire was self-administered to 40 staff nurses, Informed consent was taken and purpose of the study was explained to the participants

2. Intervention phase:

- The structure knowledge questionnaire was self-administered followed by power point presentation and hands on skill training on assessment of PEWS which took 45 mints.
- Case scenario was given doubts was clarified.

3. Closing phase:

- On seventh day posttest knowledge and practice was assessed.

Plan for Data Analysis

Data obtained was analyzed using descriptive and inferential statistics as follow.

- Frequency and percentage was used to analyze socio demographic data.
- Paired t test was used to compare the effectiveness between knowledge and practice of score by comparing pre and post test.
- Person's correlation was done to determine the correlation between the knowledge and practice of staff nurses.
- Chi square was used to find the association between the post test knowledge and post -test practice with selected socio demographic variables.

SUMMARY

This chapter dealt with the methodology, research approach, research design, setting, population, sample and sampling technique, development and description of the tool, content validity and reliability of the tool, pilot study, methods of data collection, data collection procedure and data analysis. The fifth coming chapter deals with analysis of data using above statistical methods.

CHAPTER-V

SAMPLE SIZE ESTIMATION

CHAPTER-V

SAMPLE SIZE ESTIMATION

THE SAMPLE SIZE ESTIMATION PROCESS

STATEMENT OF THE PROBLEM

"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar.''

Research approach: Quantitative research approach

Research design: Pre experimental research design

Sampling technique: Convenient sampling technique

Sample size:

Sample Size estimation: Sample size was estimated based on the effectiveness of structure teaching programme on knowledge regarding pediatric early warning score among staff nurses Raj kol based on Mr. Devi Lal Janwa.

SD=19.21,e=5% Z=1.96,

$N=Z^2$ (Var) $2(e)^2$

Where Z=confidence level at 95% (stand value of 1.96)

Var= Variance of population

e= allowable error

$= (1.96)^2 (19.21)^2/5^2$

$=3.84(369.02)/25$

$=14717/25$

$=56.68$

For the present study 40 staff nurse were selected who are working in PICU of R.L Jalappa Hospital and research center Tamaka Kolar.

Signature of the statistician

Mr. S. Ravishankar
Asst. Professor Statistics
Dept

CHAPTER-VI

DATA ANALYSIS AND INTERPRETATION

Data analysis is the schematic organization of research data and the testing of research hypothesis using that data. (Kothari CR.2004).

This chapter deals with analysis and interpretation of data gathered from staff nurses through structure knowledge questionnaire and presented based on the following objectives. [42]

Objectives

1) To assess the knowledge among staff nurses on Pediatric Early Warning Score by using structured knowledge questionnaire.

2. To assess the practice of staff nurses on assessment of Pediatric Early Warning Score by using observational check list.

3. To evaluate the Hands-on Skill training on Pediatric Early Warning Score assessment by comparing pre and post test score of knowledge and practice.

4. To determine the correlation between the knowledge and practice of staff nurses on pediatric early warning score.

5. To determine the association between post- test knowledge score and practice score with socio selected socio demographic variables.

NULL HYPOTHESIS

$H0_1$: There will not be any significant difference in mean pretest and mean post test score on knowledge and practice among staff nurses regarding Pediatric Early Warning Score.

$H0_2$: There will not be any significant correlation between the mean knowledge score and practice scores among staff nurses regarding Pediatric Early Warning Score.

$H0_3$: There will not be any significant association between the post test knowledge and post- test practice with selected sociodemographic variables.

BASED ON THE OBJECTIVES AND HYPOTHESIS OF THE STUDY, THE DATA COLLECTED WERE TABULATED, ORGANIZED AND PRESENTED UNDER THE FOLLOWING SECTIONS.

Table-1 Description of Socio demographic data of staff nurses

SL NO		Variables	Frequency(f)	Percentage (%)
1.	**Age**	23-25	17	42.5%
		26-30	18	45%
		31-36	5	12.5%
		>37	0	0%
2.	**Gender**	Male	0	0%
		Female	40	100%
3.	**Marital status**	Married	22	55%
		Unmarried	18	45%
4.	**Education status**	GNM	18	45%
		BSC	16	40%
		PBBSC	5	12.5%
		MSC	1	2.5%
5.	**Work Experience**	0-1	9	22.5%
		2-6	21	52.5%
		7-9	8	20%
		>9	2	5%

- Shows that majority of staff nurses age group were in the age group between 26 to 30 years (45%), 42.5% of staff nurses were with age group of 23 to 25 years and 12.5% of staff nurses were with the age group of 31 to 36 years of age group.
- With regard to gender all the staff nurses were females (100%).
- With regard to marital status, majority of staff nurses were married (55%) and remaining 45% unmarried.
- With regard to education of staff nurses Majority education was General Nursing Midwifery (45%), 40% had the Bachelor of Science in Nursing, 12.5 % had Post Basic BSc Nursing and 2.5% of them educated with Master of Science in Nursing.
- With regard to work experience majority had 2-6 years (52.5%) experience, 22.5 % of them had 0-1 years of experience and 20% were between 7-9 years' experience and 5% > 9 years experience.

Based on objectives

Objective-1 To assess the Knowledge among staff nurses on Pediatric Early Warning Score by using structure knowledge questionnaire.

Table 2: Level of Pretest Knowledge among Staff Nurses on Pediatric Early Warning Score.

N=40

SL NO	Knowledge	Frequency (f)	Percentage (%)
1.	Adequate	0	0%
2.	Average	22	55%
3.	Inadequate	18	45%

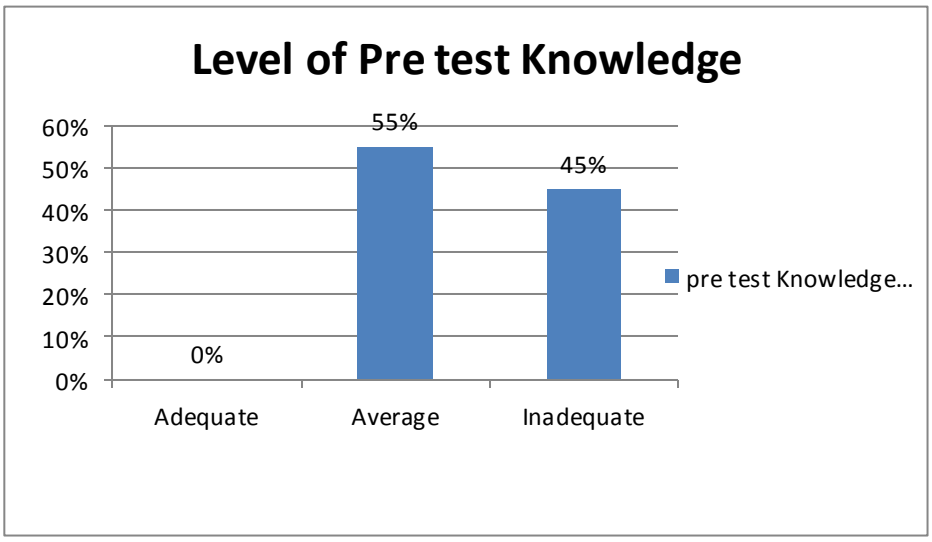


Figure-3

Level of Pretest Knowledge among staff nurses on Pediatric Early Warning Score.

The above table 2 and figure 3 shows the overall Pre-test knowledge score of staff nurses. Majority (55%) of staff nurses had average knowledge, 43% of them had inadequate knowledge and none of the staff nurses had adequate knowledge.

Objective 2 To assess the practice of staff nurses on assessment of Pediatric Early Warning Score by using observational check list.

Table-3 Level of Practice of Staff Nurses on Pediatric Early Warning Score.

N=40

Sl No	Knowledge practice	Frequency (f)	Percentage (%)
1.	Good practice	0	0%
2.	Average practice	18	45%
3.	Poor practice	22	55%

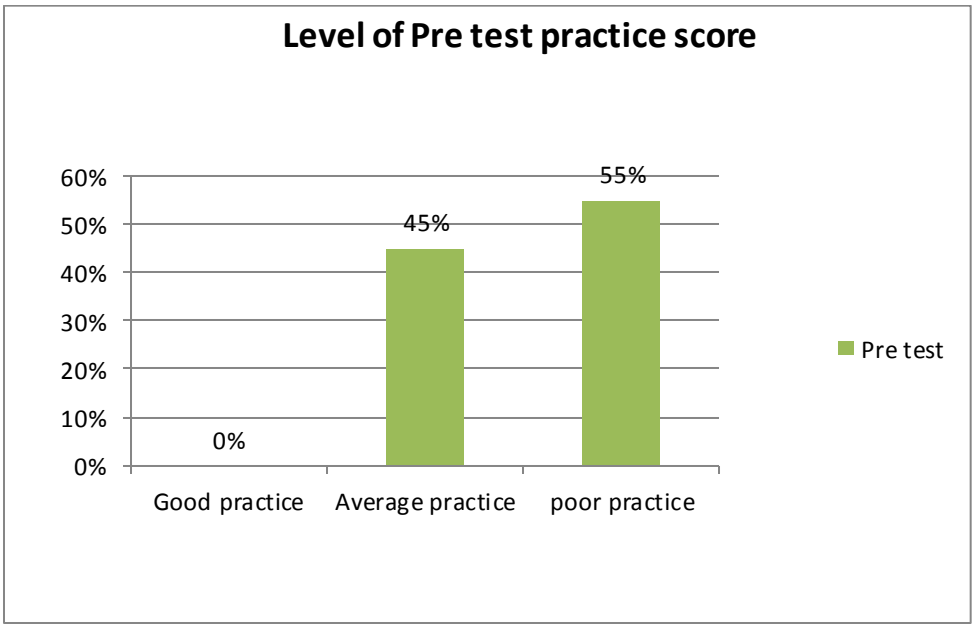


Figure-4 Level of Practice of Staff nurses Pediatric Early Warning Score.

The table 3 figures 4 shows that the overall pre-test practice scores of Staff Nurses, that majority of Staff Nurses had Poor Practice (55%), 45% of them had average practice and none of the staff nurses had good practice.

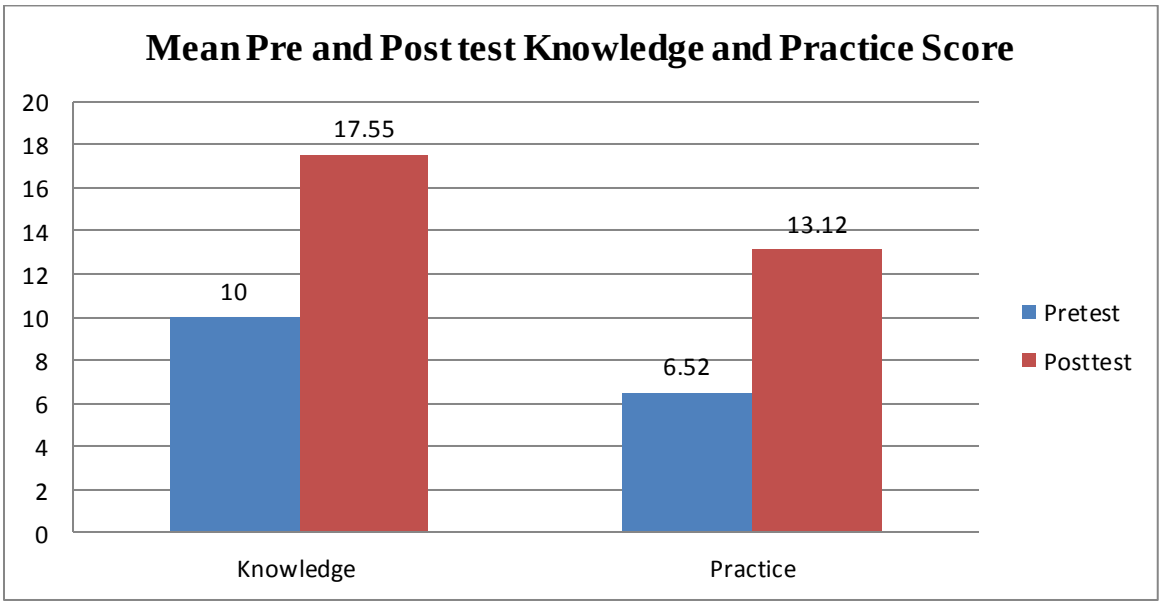
Objective-3 To evaluate the Hands on skill training on Pediatric Early Warning Score assessment by comparing pre and post test Score of Knowledge and Practice.

Table-4 Mean pre -test and post- test knowledge and Practice Score of staff nurses.

N=40

Variable	Pre test Mean SD	Posttest mean SD	t value	df	p value
Knowledge	10± 2.42	17.55± 1.61	16.994	39	.002
Practice	6.52±1.21	13.12±0.88	27.5	39	<.001

*Significant at<0.05 level



Data presented table 4 figure 5 compares the mean pretest and posttest knowledge and mean pretest and post -test practice by using paired t test.

The pre-test mean Knowledge score of staff nurses is 10± 2.42 and post mean score is 17.55± 1.61 which shows statistically significant difference between the pre and post mean Knowledge score.

The pre-test mean Practice Score of staff nurses is 6.52±1.21 and post mean score is 13.12±0.88 which shows statistically significant difference between the pre and post mean Practice score.

The difference observed in mean score of knowledge (p=.002) and practice (p=<.001) was statistically significant. Thus null hypothesis $H0_1$ is rejected and research hypothesis $H0_1$was accepted. Hence it is evident that Hands on skill training on Pediatric Early Warning Score assessment found to be effective.

Table-5 Comparison of level of Pretest and Posttest Knowledge among Staff Nurses on Pediatric Early Warning Score.

N=40

Sl no	Knowledge	Pre-test (%)	Post -test (%)
1	Adequate	0%	87.5%
2.	Average	55%	12.5%
3.	Inadequate	45%	0%

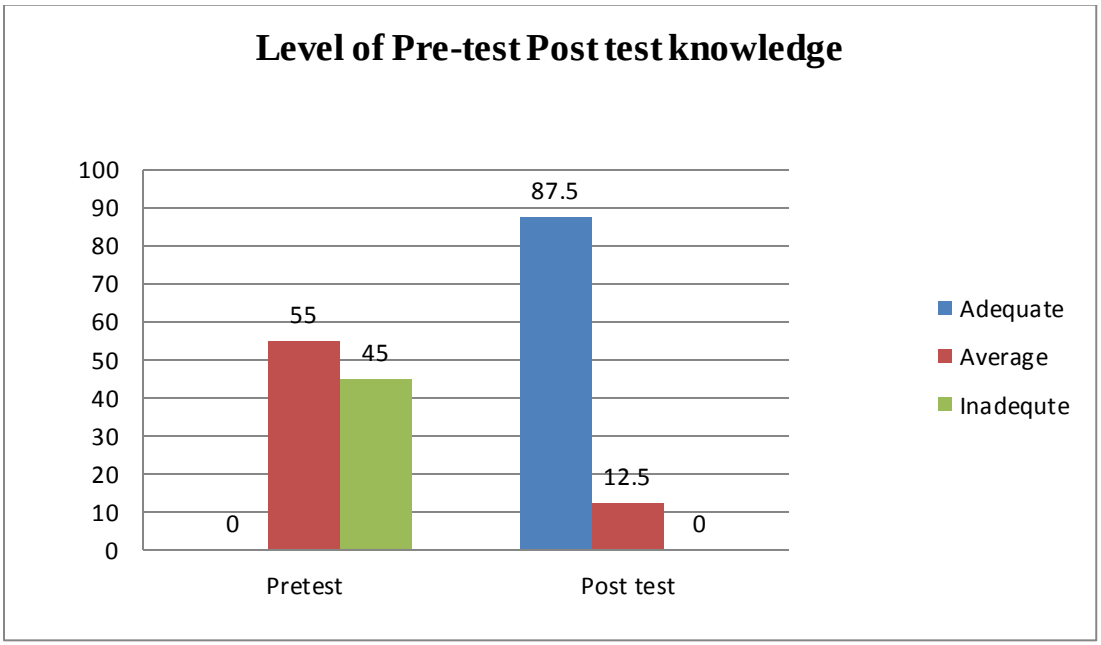


Figure-6 Comparison of level of Pretest and Posttest knowledge of Staff Nurses.

With the above table 5 and figure 6 depicts that the overall Pre-test knowledge Score of Staff Nurses. Majority of staff nurses had average knowledge (55%), 45% them had inadequate knowledge and none of them had adequate knowledge. Where as in Post –test, majority of staff nurses had adequate knowledge (87%), 12.5% them had average knowledge and none of them had inadequate knowledge.

From the pre-test adequate knowledge of 0%, there is increase to 87.5% of post- test adequate knowledge among staff nurses regarding PEWS.

Table-6 Comparison of level of pretest and posttest practice

N=40

SL No	Practice	Pre- test (%)	Posttest (%)
1.	Good practice	0%	80%
2.	Average practice	37.5%	20%
3.	poor practice	62.5%	0%

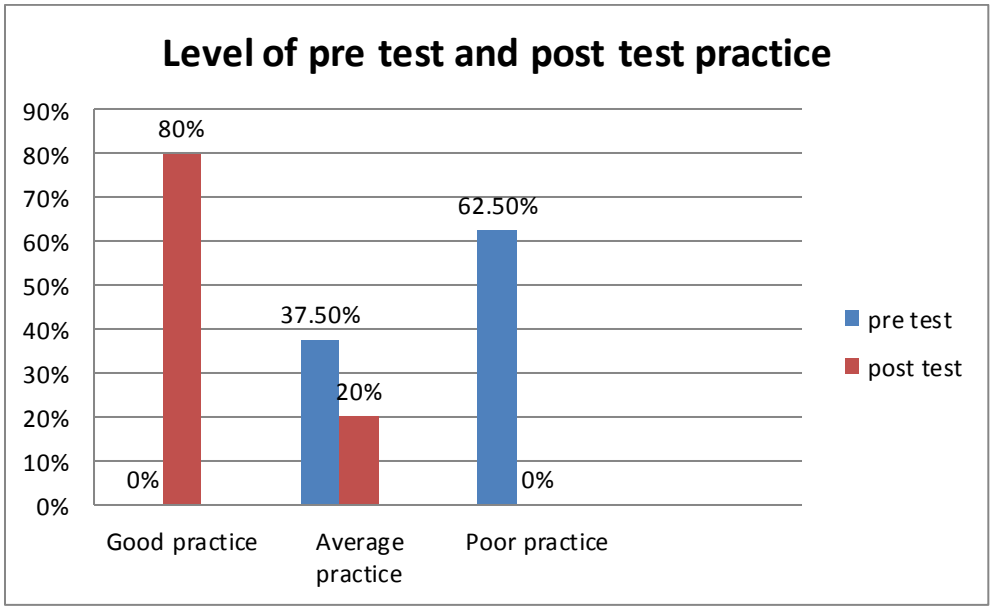


Figure-7 Comparison of level of Pretest and posttest practice of staff nurses regarding PEWS.

With the above table 6, figure 7 shows that over all pretest practice of staff nurses. Majority of staff nurses had poor practice (62.50%), 37.50% them had average practice and none of them had good practice. In Posttest practice of staff nurses, majority of staff nurses had good practice (80%), 20% them had average practice and none of them had poor practice.

From the pre-test good practice of 0%, there is increase to 80% of post- test good practice among staff nurses regarding PEWS.

Objective-4 To determine the correlation between the knowledge and practice of staff nurses on pediatric early warning score.

Table- 7 Correlation between posttest knowledge and Practice of Staff nurses on Pediatric Early Warning Score.

Variable	Pretest		Post Test	
	r value	p value	r value	p value
Knowledge	.09	.55	-.089	.60
Practice				

There is statistically no significant correlation(p=.55) between pre tset knowledge and pretest practice of staff nurses on Pediatric Early Warning Score.

Hence null hypothesis H02 stated is accepted.

Table-8 Association between Posttest Knowledge Score with selected socio demographic variables.

N=40

Sl No.	Variables	Posttest knowledge		χ^2	df	P	Inference
		Below Median <18	**Above Median >18**				
1.	Age >25years	8	12	6.6	1	0.09	SS
	<25 years	16	4				
2.	Marital status Married	15	10	0.73	1	0.39	NS
	Un married	11	4				
3.	Educational status Diploma	13	4	2.46	1	0.11	NS
	Graduate	12	4				
4.	Work experience <1 Year	18	12	0.32	1	0.57	NS
	>1 year	7	3				

From the above table 8 it is evident that there is statistically significant association only with age group of staff nurses (χ^2value 6.6) and not significant with marital status (χ^2value0.73), educational status (χ^2 value 2.46) and work experience (χ^2value0.32).

Thus null hypothesis $H0_3$ is partially rejected with regard to only age (p=0.09) of staff nurses and with regard to marital status, educational status and work experience the research hypothesis H3 his partially accepted.

So it is evident that knowledge on Pediatric Early Warning Score is more among staff nurse whose age is above 25 years.

Table-9 Association between Posttest Practice Score with selected socio demographic variables.

SL No	Variables	Post- test Practice		χ^2	df	P	Inference
		<13	>13				
1.	Age >25	15	4	1.08	1	0.2	NS
	<25	16	9				
2.	Marital status Married	12	9	2.16	1	0.14	NS
	Unmarried	15	4				
3.	Educational status Diploma	11	10	4.60	1	0.03	SS
	Graduate	16	3				
4.	Work Experience <1year	6	10	10.94	1	0.009	SS
	>1 year	21	3				

From the above table 9 it is evident that there is statistical significant association with work experience of staff nurses (χ^2 value 10.94) and with educational status (χ^2 value 4.60). There was statistically no significant difference with age (χ^2value 1.08) and marital status (χ^2value2.16). So it was evident that good practice is seen more among diploma nurses and who are having less than one year experience.

Thus null hypothesis $H0_3$ is partially rejected with regard to work experience

(p= 0.009) and educational status (p=0.03) of staff nurses and with regard to age and marital status the research hypothesis H0 partially accepted.

So it is evident that practice on Pediatric Early Warning Score is more among staff nurses whose educational status is diploma and work experience is less than one year more.

CHAPTER -VII

DISCUSSION

It is regard to be crucial for patient for safety, particularly in packed EDs, to identify those children who need rapid treatment among the big population of children who do not require urgent care. The majority of EDs use some kind of triage to determine the order of care for the entire patient that come in, including kids. Multiple physiological parameters shows promised as diagnostic tool for spotting sick children. PEWS are ‘‘scoring systems’ ‘based on ‘‘physiological’’

Measures intended to identify worsening clinical condition hospitalized patient where tallied periodically and ternded. PEWS is an observational chart designed for pediatric patient at risk of worsening clinical condition in wards which can be performed and interpreted by nurse and non-specialist doctors.

I SOCIO DEMOGRAPHIC VARIABLES OF STAFF NURSES

- Shows that majority of staff nurses age group were in the age group between 26 to 30 years (45%), 42.5% of staff nurses were with age group of 23 to 25 years and 12.5% of staff nurses were with the age group of 31 to 36 years of age group.
- With regard to gender all the staff nurses were females (100%).
- With regard to marital status, majority of staff nurses were married (55%) and reaming 45% unmarried.
- With regard to education of staff nurses Majority education was General Nursing Midwifery (45%), 40% had the Bachelor of Science in Nursing, 12.5

% had Post Basic BSc Nursing and 2.5% of them educated with Master of Science in Nursing.

- With regard to work experience majority had 2-6 years (52.5%) experience, 22.5 % of them had 0-1 years of experience and 20% were between 7-9 years' experience and 5% > 9 years experience.

II Level of Pretest Knowledge among Staff Nurses on Pediatric Early Warning Score

Majority (55%) of staff nurses had average knowledge, 43% of them had inadequate knowledge and none of the staff nurses had adequate knowledge.

III Level of Practice of Staff Nurses on Pediatric Early Warning Score.

Majority of Staff Nurses had Poor Practice (55%), 45% of them had average practice and none of the staff nurses had good practice.

IV Effectiveness of Hands on skill training on Pediatric Early Warning Score assessment by comparing pre and post test Score of Knowledge and Practice.

The pre-test mean Knowledge score of staff nurses is 10± 2.42 and post mean score is 17.55± 1.61 which shows statistically significant difference between the pre and post mean Knowledge score.

The pre-test mean Practice Score of staff nurses is 6.52±1.21 and post mean score is 13.12±0.88 which shows statistically significant difference between the pre and post mean Practice score.

V Comparison of level of Pretest and Posttest Knowledge among Staff Nurses on Pediatric Early Warning Score.

Majority of staff nurses had average knowledge (55%), 45% them had inadequate knowledge and none of them had adequate knowledge. Where as in Post –test, majority of staff nurses had adequate knowledge (87%), 12.5% them had average knowledge and none of them had inadequate knowledge.

VI Comparison of level of Pretest and posttest practice of staff nurses regarding PEWS.

Majority of staff nurses had poor practice (62.50%), 37.50% them had average practice and none of them had good practice. In Posttest practice of staff nurses, majority of staff nurses had good practice (80%), 20% them had average practice and none of them had poor practice.

VII Correlation between posttest knowledge and Practice of Staff nurses on Pediatric Early Warning Score.

There is statistically no significant correlation(p=.55) between pre tset knowledge and pretest practice of staff nurses on Pediatric Early Warning Score.

There is statistically no significant correlation(p=.60) between post knowledge and post practice of staff nurses on Pediatric Early Warning Score.

VIII Association between Posttest Knowledge and practice score with selected socio demographic variables.

There is statistically significant association only with age group of staff nurses (χ^2value 6.6) and not significant with marital status (χ^2value0.73), educational status (χ^2value 2.46) and work experience (χ^2value0.32).

There is statistical significant association with work experience of staff nurses (χ^2value 10.94) and with educational status (χ^2 value 4.60). There was statistically no significant difference with age (χ^2value 1.08) and marital status (χ^2value2.16). So it was evident that good practice is seen more among diploma nurses and who are having less than one year experience.

With regard to comparing the present finding with other study there is no such similar studies found among nurses however. A study conducted in PICU with regard to simulation with deliberate practice with ICU nurses knowledge. Total of 24 nurses participated in the simulation education series. All participants had two years or less of PICU experience, with 14 (58%) reporting less than one year of experience. scores for clinical teamwork performance, knowledge, and self-confidence increased from pre- to post- simulation education. [44]

Another study the structure intervention programme was given about oxygen therapy on nurses knowledge and practice in PICU results shows that the average test score before and after implementation of the education were 10.75±2.65 and 17.5±2.04 respectively. The average post test score was greater than that of the post test and the difference was statistically significant ($p<0.04$).[44]

SUMMARY:

It is evident that Hands on skill training on PEWS was found to be effective in improving the knowledge and practice among staff nurses working in Pediatric Intensive care unit.

CHAPTER -VIII

CONCLUSION

To assess the effectiveness of structure teaching programme on knowledge regarding pediatric early warning score of staff nurses working pediatric intensive care unit at RLJH&RC Kolar. For the study, a pre-experimental research design with one group pre-test and post-test design used. Through convenient sampling technique. 40 staff nurses selected using inclusion criteria. Then existing knowledge on pediatric early warning score was assessed through a structure knowledge questionnaire. Followed by Hands on skill training programmer was administered. After 07 days, the staff nurses were assessed using the same knowledge questionnaire. This results of the study revealed that knowledge score pre-test and post-test.

Major Study Findings

- Majority of staff nurses belongs to age group 26-30 years (45%) all staff nurses were females and majority of them are married (55%) majority of staff nurses were educated with general nursing midwifery (45%) have work experience of 2-6 years (52.5%).
- There is significant increase in the mean pre- test knowledge to post test knowledge and mean pre- test practice to mean post- test practice after hands on skill training on PEWS among staff nurses working in PICU.
- With regard to findings of Level of Pretest Knowledge and pre- test practice among Staff Nurses on Pediatric Early Warning Score, majority of staff nurses had average knowledge and poor practice.

- There is significant increase in the mean pretest knowledge to post test knowledge and mean pretest practice to mean posttest practice after hands on skill training on PEWS among staff nurses working in PICU.
- With regard to the knowledge of staff nurses, from the pre-test adequate knowledge of 0%, there is increase to 87.5% of post- test adequate knowledge among staff nurses regarding PEWS.
- With regard to the knowledge of staff nurses, from the pre-test good practice of 0%, there is increase to 80% of post- test good practice among staff nurses regarding PEWS.
- There is statistically no significant correlation between pre test and post test knowledge and pretest practice of staff nurses on Pediatric Early Warning Score.
- With regard to association between Posttest Knowledge Score with selected socio demographic variables there was statistically significant association only with age group of staff nurses and not significant with marital status, educational status and work experience.
- With regard to association between Posttest practice Score with selected socio demographic variables There is statistical significant association with work experience of staff nurses and with educational status.

NURSING IMPLICATION

The results of this study have a number of implications for clinical practice, nursing education and nursing research.

1. NURSING ADMINISTRATION

Nursing administration is a sector to control the management operation along with arrangement of services in order to plan for organization. Nursing administrators take initiative for continuous education program.

- Nurse administrator can arrange for in service education programme for nurses to orient regarding hands on skill training on Pediatric Early Warning Score.
- Nurse administrator can develop standard practice guidelines regarding Pediatric Early Warning Score on children's.

2. NURSING PRACTICE

- Keeping the findings of the study as base, PICU nurses can practice the hands on skill training on pediatric early warning score**.**

3. NURSING EDUCATION

Nursing education is an essential tool for the expansion of the nursing profession. From the study results the nurse educator can plan as follow;

- Undergraduate postgraduate students can be imparted specialized knowledge on pediatric early warning score.
- Based on the findings of the study, nurse educator can educate PICU nurses
- Nursing curriculum can also include the assessment of pediatric early warning score in caring of critically ill child.

4. NURSING RESEARCH

Nursing research is a systematic investigation and study of materials, sources etc. in order to establish facts and research conclusion.

- Findings of the study add to body of knowledge.
- The suggestions and recommendations can be utilizing by other researchers for further studies in the same.
- Emphasize evidence based practice to provide quality care to pediatric children's.

LIMITATIONS

- The study is limited to R.L Jalapa hospital and research Center, Kolar.
- The study is limited to PICU staff nurses.

RECOMMENDATIONS

- A similar study can be conducted by using larger populations.
- A true experimental study can be directed by using educational interventions to evaluate the effectiveness on hands on skill training programme.
- A similar study can be conducted with mixed method to identify factors in improving pediatric patient care in PICU

CHAPTER-IX

SUMMARY

This chapter discusses the study summary, limitation, Nursing implications, and recommendation for the future study.

The present study intended to evaluate effectiveness of enhanced hands on skill training programme on Pediatric Early Warning Score among staff nurses working in pediatric intensive care unit at RL Jalapa Hospital Kolar.

THE OBJECTIVES OF THE STUDY:

1. To assess the knowledge among staff nurses on Pediatric Early Warning Score by using structured knowledge questionnaire.
2. To assess the practice of staff nurses on assessment of Pediatric Early Warning Score by using observational check list.
3. To evaluate the Hands-on Skill training on Pediatric Early Warning Score assessment by comparing pre and post test score of knowledge and practice.
4. To determine the correlation between the knowledge and practice of staff nurses on Pediatric Early Warning Score.
5. To determine the association between posttest knowledge score and practice score with socio demographic variables.

RESEARCH HYPOTHESIS:

$H0_1$: There will not be any significant difference in mean pretest and mean post test score on knowledge and practice among staff nurses regarding Pediatric Early Warning Score.

$H0_2$: There will not be any significant correlation between the mean knowledge score and practice scores among staff nurses regarding Pediatric Early Warning Score.

$H0_3$: There will not be any significant association between the post test knowledge and post- test practice with selected sociodemographic variables.

METHODLOGY

In the present study, Pre-experimental with one group pre-test and posttest design was used for the study. The sample consists of 40 staff nurses who were selected by convenient sampling technique. The study was conducted in PICU at R.L Jalappa hospital Tamaka Kolar. The data collection tools used includes Structured Knowledge Questionnaire to assess knowledge on PEWS assessment among staff nurses and Observational Checklist form to observe the practice on assessment of PEWS among PICU admitted children's. The reliability and validity of the tool was established. After obtaining ethical clearance and permission from higher authorities of Hospital, the study was conducted. Before starting the data collection informed consent and patient information was taken. Self-administered questionnaire was given to assess the pretest followed by hands on skill training on PEWS. After one week post test was conducted by giving structured knowledge questionnaire and practice observed by using observational checklist. Descriptive statistics and inferential statistics like paired t test, pearsons correlation and chi-square test was used

MAJOR RESULTS OF THE STUDY:

SOCIO DEMOGRAPHIC VARIABLES OF STAFF NURSES

- Shows that majority of staff nurses age group were in the age group between 26 to 30 years (45%), 42.5% of staff nurses were with age group of 23 to 25 years and 12.5% of staff nurses were with the age group of 31 to 36 years of age group.
- With regard to gender all the staff nurses were females (100%).
- With regard to marital status, majority of staff nurses were married (55%) and reaming 45% unmarried.
- With regard to education of staff nurses Majority education was General Nursing Midwifery (45%), 40% had the Bachelor of Science in Nursing, 12.5 % had Post Basic BSc Nursing and 2.5% of them educated with Master of Science in Nursing.
- With regard to work experience majority had 2-6 years (52.5%) experience, 22.5 % of them had 0-1 years of experience and 20% were between 7-9 years' experience and 5% > 9 years experience.

Level of Pretest Knowledge among Staff Nurses on Pediatric Early Warning Score

- Majority (55%) of staff nurses had average knowledge, 43% of them had inadequate knowledge and none of the staff nurses had adequate knowledge.

Level of pre-test Practice of Staff Nurses on Pediatric Early Warning Score

- Majority of Staff Nurses had Poor Practice (55%), 45% of them had average practice and none of the staff nurses had good practice.

Effectiveness of Hands on skill training on Pediatric Early Warning Score assessment by comparing pre and post test Score of Knowledge and Practice.

- The pre-test mean Knowledge score of staff nurses is 10± 2.42 and post mean score is 17.55± 1.61 which shows statistically significant difference between the pre and post mean Knowledge score.
- The pre-test mean Practice Score of staff nurses is 6.52±1.21 and post mean score is 13.12±0.88 which shows statistically significant difference between the pre and post mean Practice score.

Comparison of level of Pretest and Posttest Knowledge among Staff Nurses on Pediatric Early Warning Score.

- Majority of staff nurses had average knowledge (55%), 45% them had inadequate knowledge and none of them had adequate knowledge. Where as in Post –test, majority of staff nurses had adequate knowledge (87%), 12.5% them had average knowledge and none of them had inadequate knowledge.

Comparison of level of Pretest and posttest practice of staff nurses regarding PEWS.

- Majority of staff nurses had poor practice (62.50%), 37.50% them had average practice and none of them had good practice. In Posttest practice of

staff nurses, majority of staff nurses had good practice (80%), 20% them had average practice and none of them had poor practice.

Correlation between posttest knowledge and Practice of Staff nurses on Pediatric Early Warning Score.

- There is statistically no significant correlation(p=.55) between pre tset knowledge and pretest practice of staff nurses on Pediatric Early Warning Score.
- There is statistically no significant correlation(p=.60) between post knowledge and post practice of staff nurses on Pediatric Early Warning Score.

Association between Posttest Knowledge and practice score with selected socio demographic variables.

- There is statistically significant association only with age group of staff nurses (χ^2value 6.6) and not significant with marital status (χ^2value0.73), educational status (χ^2 value 2.46) and work experience (χ^2value0.32).
- There is statistical significant association with work experience of staff nurses (χ^2 value 10.94) and with educational status (χ^2 value 4.60). There was statistically no significant difference with age (χ^2value 1.08) and marital status (χ^2value2.16). So it was evident that good practice is seen more among diploma nurses and who are having less than one year experience.

SUMMARY:

It is evident that Hands on skill training on PEWS was found to be effective in improving the knowledge and practice among staff nurses working in Pediatric Intensive care unit.

REFERENCES

1. Office of Registrar General and Census Commissioner, Ministry of Home Affairs, Government of India. Vol. 52. SRS Bulletin; 2019. Availablefrom:http://www.censusindia.gov.in/vital_statistics/SRS_Bulletins/Bull etins.ml
2. UNICEF, United Nations. Available from: https://data.unicef.org/country/ ind. [Last accessed on 20 Jan 24].
3. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? Lancet 2003;361:2226-34.
4. 4.Million Death Study Collaborators, Bassani DG, Kumar R, Awasthi S, Morris SK, Paul VK, Shet A, et al. Causes of neonatal and child mortality in India: A nationally representative mortality survey. Lancet 2010;376:1853-60.
5. Haque A, Siddiqui NR, Jafri SK, Hoda M, Bano S, Mian A. Clinical profiles and outcomes of children admitted to the paediatric intensive care unit from the emergency department. J Coll Physicians Surg Pak 2015:25;301-3.
6. Rashma RP, Remya S, Jayakumar C, Manu R. Mortality profile of children admitted to intensive care unit of a tertiary care hospital in Kerala, South India. Int J Med Clin Sci 2018;16:13-6.
7. Parshuram CS, Hutchinson J, Middaugh K.. Development and initial validation of the Bedside Paediatric EarlyWarningSystem score.Crit Care. 2009; 13: R135.
8. Juliana de Oliveira Freitas Miranda, Climene Laura de Camargo, Carlito Lopes Nascimento Sobrinho, Daniel Sales Portela,. Alan Monaghan. Accuracy of a pediatric early warning score in the recognition of clinical deterioration1. Rev.

Latino-Am. Enfermagem vol.25 Ribeirão Preto 2017 Epub July 10, 2017http: //dx. doi.org/10.1590/1518-8345.1733.2912.

9. Tucker KM, Brewer TL, Baker RB, Demeritt B, Vossmeyer MT. Prospective evaluation of a pediatric inpatient early warning scoring system. J Spec Pediatr Nurs. 2009 Apr; 14 (2):79-85. doi: 10.1111/j.1744-6155.2008.00178.x.
10. Delia L. Gold, Leslie K. Mihalov, Daniel M. Cohen. Evaluating the Pediatric Early Warning Score (PEWS) System for Admitted Patients in the Pediatric Emer-gency Department. AcadEmerg Med. 2014 Nov; 21 (11): 1249–1256.
11. Paterson R, MacLeod DC, Thetford D, Beattie A, Graham C, Lam S, Bell D. Prediction of in-hospital mortality and length of stay using an early warning scoring system: clinical audit.Clin Med (Lond).2006 May-Jun;6(3):281-4.
12. Karen M,Tucker.et al. Prospective evaluation of pediatric inpatient early warning score system, journal of specialists in pediatric nursing;p 14(2)79-85
13. Dunkan et.al. Pediatric early warning system DOI. score; A Severity of illness score to predict early medical need in hospitalized children critical care:2006 available from 10.1016/JJCRC.2006.06.07
14. Trubey R, Huang C, Lugg-WidgerF, Hood K, Allen D, Edwards D et al. Validity and effectiveness of paediatric early warning systems and trackand trigger tools for identifying and reducing clinical deterioration in hospitalisedchildren: a systematic review. BMJ Open. 2019;9:e022105.
15. Aziz S, Mahmoud M, Rehman Z. Implementation of CIPP Model for Quality Evaluation at School Level: A Case Study. Journal of Education and EducationalDevelopment.2018Jun;5(1):189-206.

16. Solevag AL, Eggen EH, Schroder J, Schroder J, Nakstad B. Use of a modified paediatric early warning score in a department of paediatric and adolescent medicine. PLOS One. 2013 Aug 26;8:e72534.
17. Vredebregt SJ, Moll HA, Smit FJ, Verhoeven JJ. Recognizing critically ill children with a modified paediatric early warning score at the emergency department, a feasibility study. European Journal of Pediatrics. 2019;178(2):229-234
18. Rosman SL, Karangwa V, Law M, Monuteaux MC, Briscoe CD, McCall N. Provisional Validation of a Pediatric Early Warning Score for Resource- Limited Settings. Pediatrics. 2019 May;143(5):e20183657.
19. Sridhar et al. Implementation of PEWS to improve communication and nursing empowerment in district rural hospital, Rwanda, global health science practice 2020 December 23:8(4): p 838-845.
20. Tume LN, Sefton G, Arrow smith P. Teaching pediatric ward teams to recognize and manage the deteriorating child. Nursing in critical care. 2014 Jul;19(4):196-203.
21. Sabaq AG, El-aasar HN, Mohammed M. Effect of educational program on improving nurses' performance regarding arterial blood gases sampling for critically Ill children. International journal of Nursing Didactics. 2019 May 10;9(05):01-10.
22. Brown KM, Hunt EA, Duval-Arnould J, Shilkofski NA, Budhathoki C, Ruddy T, Perretta JS, Keslin AN, Stella A, Slattery JM, Nelson-McMillian K. Pediatric critical care simulation curriculum: training nurse practitioners to lead in the management of critically ill children. Journal of Pediatric Health Care. 2020 Nov 1;34(6):584-90.

23. Aziz A, Abbas Q, Jaffer M, Sultan N, Ladak L. Knowledge, Attitude & Practice of Health Care Workers Regarding Pediatric Early Warning System-A Cross Sectional Study in Karachi, Pakistan. Circulation. 2021 Nov 16;144(Suppl_1):A13839-.
24. Petrillo-Albarano T, Stockwell J, Leong T, Hebbar K. The use of a modified pediatric early warning score to assess stability of pediatric patients during transport. Pediatric emergency care. 2012 Sep 1;28(9):878-82.
25. Solevåg AL, Eggen EH, Schröder J, Nakstad B. Use of a modified pediatric early warning score in a department of pediatric and adolescent medicine. PloS one. 2013 Aug 26;8(8):e72534.
26. Kowalski RL, Lee L, Spaeder MC, Moorman JR, Keim-Malpass J. Accuracy and monitoring of pediatric early warning score (PEWS) scores prior to emergent pediatric intensive care unit (ICU) transfer: retrospective analysis. JMIR Pediatrics and Parenting. 2021 Feb 22;4(1):e25991.
27. Breslin K, Marx J, Hoffman H, McBeth R, Pavuluri P. Pediatric early warning score at time of emergency department disposition is associated with level of care. Pediatric emergency care. 2014 Feb 1;30(2):97-103.
28. Gold DL, Mihalov LK, Cohen DM. Evaluating the Pediatric Early Warning Score (PEWS) system for admitted patients in the pediatric emergency department. Academic emergency medicine. 2014 Nov;21(11):1249-56.
29. McGaughey J, O'Halloran P, Porter S, Trinder J, Blackwood B. Early warning systems and rapid response to the deteriorating patient in hospital: a realist evaluation. Journal of advanced nursing. 2017 Dec;73(12):3119-32.

30. Jensen CS, Nielsen PB, Olesen HV, Kirkegaard H, Aagaard H. Pediatric early warning score systems, nurses perspective–a focus group study. Journal of pediatric nursing. 2018 Jul 1;41:e16-22.

31. Tucker KM, Brewer TL, Baker RB, Demeritt B, Vossmeyer MT. Prospective evaluation of a pediatric inpatient early warning scoring system. Journal for Specialists in Pediatric Nursing. 2009 Apr;14(2):79-85.

32. Bonafide CP, Brady PW, Keren R, Conway PH, Marsolo K, Daymont C. Development of heart and respiratory rate percentile curves for hospitalized children. Pediatrics. 2013 Apr 1;131(4):e1150-7.

33. Parshuram, C.S., Hutchison, J. & Middaugh, K. Development and initial validation of the Bedside Paediatric Early Warning System score. *Crit Care* 13, R135 (2009). https://doi.org/10.1186/cc7998.

34. Skaletzky SM, Raszynski A, Totapally BR. Validation of a Modified Pediatric Early Warning System Score: A Retrospective Case–Control Study. *Clinical Pediatrics*. 2012;51(5):431-435. doi:10.1177/0009922811430342

35. Ramteke DS, Tikkas DR, Jain DA. Pediatric early warning score as a prognostic indicator in critically ill children - a prospective study. Pediatr Rev Int J Pediatr Res. 2018;5(2):66-71.

36. Chaiyakulsil C, Pandee U. Validation of pediatric early warning score in pediatric emergency department. Pediatr Int. 2015;57(4):694-698.

37. Kowalski RL, Lee L, Spaeder MC, Moorman JR, Keim-Malpass J. Accuracy and Monitoring of Pediatric Early Warning Score (PEWS) Scores Prior to Emergent Pediatric Intensive Care Unit (ICU) Transfer: Retrospective Analysis. JMIR Pediatr Parent. 2021;4(1):e25991.

38. McLellan MC, Gauvreau K, Connor JA. Validation of the Children's Hospital Early Warning System for Critical Deterioration Recognition. J Pediatr Nurs. 2017;32:52-58.
39. Elencwajg MMD., Grisolía NAMD., Meregalli CMD., Montecuco MAMD., Montiel MVMD., Gabriela M. Rodríguez MD., et al. Usefulness of an early warning score as an early predictor of clinical deterioration in hospitalized children. Arch Argent Pediatr. 2020;118.
40. Chaiyakulsil C. Validation of thammasat pediatric early warning score for prediction of pediatric intensive care unit admission. TMJ. 2020 Sep 30;20(3):215-25.
41. PoliDF,BeckCT.NursingResearchPrinciplesandMethods.7thed.Philadelphia:Lippi ncottCompany.2004
42. Polit, D. and Hungler, B.: Nursing Research: Principle and Method, 6th ed.; Philadelphia: Lippincott Company; 1999; Pg: 416-417.
43. Karageorge N, Muckler VC, Toper M, Hueckel R. Using simulation with deliberate practice to improve pediatric ICU nurses' knowledge, clinical teamwork, and confidence. Journal of Pediatric Nursing. 2020 Sep 1;54:58-62.
44. Mustafa G. Effect of an Educational Program on Nurses' Knowledge and Practice of Oxygen Therapy. Cureus. 2023 May 19;15(5):e39248. doi: 10.7759/cureus.39248. PMID: 37342739; PMCID: PMC10277655.

ANNEXURE –I

	SRI DEVARAJ URS COLLEGE OF NURSING TAMAKA, KOLAR – 563 103. INSTITUTIONAL ETHICS COMMITTEE	Format No.	IEC 01
		Issue No.	02
		Rev No.	01
		Date	01-09-2018

Ref.:No.SDUCON/IEC/ 109/2022 **Date: 28/07/2022**

To
Ms. Prema N
I year M.Sc Nursing (Child Health Nsg.)
SDUCON,
Tamaka, Kolar-563103

This is to certify that the Institutional Ethics Committee of Sri Devaraj Urs College of Nursing, Tamaka, Kolar has examined and unanimously approved the Topic: **Impact of enhance hands on skill in implementation of pediatric early warning score assessment among nursing staff on patient outcomes at PICU in selected hospital, kolar** of Ms. Prema N, under the guidance of Dr. Lavanya subhashini, Sri Devaraj Urs College of Nursing.

Member Secretary
MEMBER SECRETARY
ETHICS COMMITTEE
SRI DEVARAJ URS COLLEGE OF NURSING
TAMAKA KOLAR - 563103.

Chairperson
CHAIR PERSON
ETHICS COMMITTEE
SRI DEVARAJ URS COLLEGE OF NURSING
TAMAKA KOLAR - 563103.

ANNEXURE-II

PERMISSION LETTER TO CONDUCT PIOLT STUDY

LETTER REQUESTING PERMISSION FOR CONDUCTING PIOLT STUDY

From,
Prema.N
II Year MSc Nursing
S.D.U.C.O.N
Tamaka Kolar.

Date-13-06-23
Place-Kolar

To,
Medical Superintendent
S.N.R Hospital Kolar
Forwarded through,
Through The Principal
S.D.U.C.O.N Tamaka Kolar

Respected Madam/Sir,

Sub:-Requesting permission to collect data for my pilot study in SNR Hospital

With the subject to the above, I the under signed student of II year MSc Nursing under the department of Child Health Nursing Specialty would like to conduct a pilot study on**"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEADIATRIC EARLY WARNING SCORE (PEWS) ASSESSMENT AMONG NURSING STAFFF PATIENT OUTCONMES AT PICU IN A SELECTED HOSPITAL KOLAR"** as a part of my partial syllabus requirement Hence I request you to grant permission to collect data from staff Nurses working in PICU at SNR Hospital Kindly consider this letter and do the needful.

Thanking you

yours faithfully,

Prema. N

Guide,
Dr Lavanya Subhashini
Vice principal &HOD
Dept of pediatric Nursing
SDUCON, Kolar.

Copy **To,**
Nursing Superintendent
SNR Hospital
Kolar.

Forwarded for the needful
considered

Dept. of Paediatric Nursing
Sri Devaraj Urs College of Nursing
Tamaka, Kolar-563 103.

Forwarded to District Surgeon, SNR Hospital with a request to permit one MSc(N) student to collect data

13/6/23

Principal
Sri Devaraj Urs College of Nursing
Tamaka, Kolar-563103

Permitted
13/6/2023

ANNEXURE-III

PERMISSION LETTER TO CONDUCT MAIN STUDY

LETTER REQUESTING PERMISSION FOR CONDUCTING RESEARCH STUDY

From,
Prema.N
II Year MSc Nursing
S.D.U.C.O.N
Tamaka Kolar

Date-15/6/2023
Place-S.D.U.C.O.N Tamaka Kolar

To,

Medical Superintendent
RLJH & RC
Tamaka Kolar
Forwarded through,
Through The Principal
S.D.U.C.O.N Tamaka Kolar
Respected Madam/Sir,

Sub:-Requesting permission to collect data for my research study in RLJH & RC

With the subject to the above, I the under signed student of II year MSc Nursing under the department of Child Health Nursing Specialty would like to conduct a research study on

"**EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEADIATRIC EARLY WARNING SCORE (PEWS) ASSESSMENT AMONG NURSING STAFFF PATIENT OUTCONMES AT PICU IN A SELECTED HOSPITAL KOLAR"** as a part of my partial syllabus requirement Hence I request you to grant permission to collect data from staff Nurses working in PICU at RLJH& RC Kindly consider this letter and do the needful.

Thanking you

Here I am enclosing with

- Synopsis
- Ethical clearance
- Data collection tool
- Informed consent

Forwarded for the needful to kindly consider.
15/06/23
Head of the Department
Dept. of Paediatric Nursing
Sri Devaraj Urs College of Nursing
Tamaka, Kolar - 563 101.

Yours faithfully
Prema N.

PREMA.N

Guide,
Dr Lavanya Subhashini
Vice Principal &HOD
Dept of pediatric Nursing
SDUCON, Kolar.

Copy To,
Chief Nursing Officer
RLJH & RC
Tamaka Kolar.

Forwarded to M.S., RLJH & RC with a request to permitted Student to collect data
16/06/23
Principal
Sri Devaraj Urs College of Nursing
Tamaka, Kolar-563103

ANNEXURE – IV

LETTER REQUESTING OPINIONS AND SUGGESTIONS OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH TOOL

FROM,

Prema.N

II Year MSc (N) Student

Sri Devaraj Urs College of Nursing

Tamaka Kolar-563103

TO,

Through The Principal,
S.D.U.C.O.N Tamaka Kolar

Respected Madam/Sir

Subject: Requesting expert's suggestion and opinion on research tool.

I Ms. Prema.N, II Year MSc (N) with pediatric Nursing Specialty of Sri Devaraj Urs College of Nursing, Tamaka, Kolar has selected a topic for my dissertation as a partial fulfillment of my master degree in nursing.

Title of the topic:

"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar."

Hence kindly I request you to validate my tool

Here with I'm enclosing statement of the problem, objective and tool, for your kind correction /suggestion. I would be highly obliged and remain thankful for your great help.

Thanking you **Yours Sincerely**

Prema.N

Through Research Guide

CRITERIA RATINGN SCALE FOR VALIDATING THE CONTEN OF THE CHECK LIST ON STRUCRTURE KNOPWLEDGE QUESTIONNAIRE

Respected Sir /Madam,

Kindly go through the content and rate the content in the appropriate columns given below:

Section-A-Socio-demographic data

SI.no	Very Relevant	Relevant	Needs modification	Not Relevant	Remarks
1					
2					
3					
4					
5					
6					

Section -B: Knowledge questionnaire on pediatric early warning score

SI.no	Very Relevant	Relevant	Needs modification	Not Relevant	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Signature of Expert

ANNEXURE – V

CONTENT VALIDITY CERTIFICATE

I hereby certify that validated the tool of Ms. Prema.N II year M.sc Nursing student of Sri Devaraj Urs College of Nursing, Tamaka Kolar, who is under taking research project as a requirement of Masters of Nursing degree.

Title of the topic,

"EFFECTIVENESS OF ENHANCED HANDS-ON SKILL IN IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORES (PEWS) ASSESSMENT AMONG NURSING STAFF ON PATIENT OUTCOMES AT PICU IN A SELECTED HOSPITAL KOLAR."

Date: **Name & signature of the expert**

Place:

ANNEXURE – VI

LIST OF EXPERTS

1. Dr Sudha Reddy

HOD of pediatric Dept.

SDUMC.

2. Dr Karthik

Assist professor

SDUMC.

3. Mrs Sebi das

AIMS College of nursing.

4. Mr. Naveen

Assist professor

Sakunthala college of Nursing

5. Dr Radha M S

Associate Professor

Pediatric nursing

M S Ramaiah

6. Mrs Sumalatha

Assist professor

SDUCON

7. Mrs Saritha

Assist professor

SDUCON

ANNEXURE – VII

CERTIFICATE FROM STATICIAN

I hereby certify that I have statistical guidance in Analysis to MS Prema.N 2nd year M.sc (N) student of Sri Devaraj Urs College of Nursing, Tamaka Kolar. For the study title as **"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar."**

Date: 30/8/22

Place: Kolar

Signature of Statistician

Mr. S. Ravishankar
Asst.Professor, Statistics
Dept. of Community Medicine
SDUMC, Kolar-563103

ANNEXURE – VIII

ENGLISH EDITING CERTIFICATE

This is to certify that Ms. Prema.N II year M.sc (N) student of Sri Devaraj Urs College of Nursing, Tamaka, Kolar. Has done a dissertation study on **"Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar."**

This study was edited for English language for its appropriateness by:

Date:

Place:

Signature

NAVEEN KUMAR GOWDA YG
Assistant Professor
RV college, Kolar

ANNEXURE-IX

INFORMED CONSENT FORM

NAME OF THE INVESTIGATOR: Ms. Prema.N

NAME OF THE ORGANIZATION: R.L.Jalappa Hospital and Research Centre, Tamaka, Kolar.

TITLEOFTHESTUDY: "Effectiveness of Enhanced Hands on Skill in implementation of (PEWS) Pediatric Early Warning Score assessment among Nursing Staff on patient outcomes at Pediatric Intensive Care Unit (PICU) in a selected hospital Kolar".

If you agree to participate in the study I will collect information as per Performa from you or a person responsible for you or both. I will collect investigations, treatment and its relevant details.

You are invited to take part in this research study. You are being asked to participate in this study because you satisfying our eligible criteria. The information in the given document is meant to help you decide whether or not to take part please feel free to ask any queries.

I have read or it has been read and explained to me in my own language. I have understood the purpose of this study, the nature of information that will be collected and disclosed during the study. I had the opportunity to ask questions and the same has been answered to my satisfaction. I understand that I remain free to withdraw from this study at any time and this will not change my future care. The undersigned agree to participate in this study and authorize the collection and disclosure of my personal information for presentation and publication.

Staff nurse signature:
Person obtaining consent and his/her signature:
Date:
Principal investigator signature:
Date:
For any clarification you are free to contact the investigator:
Principal Investigator
Prema.N
Contact No: 9108654280

ANNEXURE-X

SOCIO DEMOGRAPIC DATA

SECTION- A

Dear Staffs,

The questionnaire consists of items related to socio-demographic data of the staff nurses. The researcher will ask the questions and kindly give correct response.

1) Age group

1)23-25

2) 26-30

3) 31-36

4) >37

2) Gender

1) Male

2) Female

3) Marital status

1) Married

2) Single

4) Educational Qualification

1) GNM

2) BSC

3) PBBSC

4) MSC

5) Work Experience

1) 0-1 years

2)2-6 years

3)7-9 years

4)>9 years

Section B

Structured Knowledge Questionnaire on pediatric early warning score

1) Expand PEWS

a) Pediatric Early warning score

b) Pediatric Early weight score

c) Pediatric Easy weight score

d) Pediatric Early weather score

2) Pediatric Early Warning score is the tool used to

a) Prevent unexpected admission to intensive care

b) Promote regular assessment of the child

c) Reduce length of stay in hospital

d) Activity promote communication

3) Which of the following score will make the child to shift to PICU

a) 0-2

b) 3-4

c) 5-6

d) > 6

4) Which are the vital signs needed to assess in this scale

a) Temperature

b) Pulse rate & heart rate

c) Saturation

d) All of the above

5) For which age group children score will be assessed

a) 2 months - 18 years

b) 19 - 20 years

c) 21 - 25 years

d) >26 years

6) When should pediatric early warning score to be assessed?

a) On admission

b) On OPD base

c) On discharge

d) On arrival of hospital

7) How frequently PEWS scoring should be done

a) Every hourly

b) Every half an hourly

c) Every second hourly

d) Every fourth hourly

8) How many days PEWS scoring should be assessed in Pediatric intensive care unit

a) Two days

b) Four days

c) Five days

d) Every day

9) If child is deteriorates what will be the nurse's priority

a) Call the doctor

b) Call the parents

c) Connect to 0_2 & check Spo2

d) Check BP

10) While monitoring vital sings should be monitored for

a) 15 second & multiply by 4

b) 1full minutes

c) In emergency for 30 second &multiply by 2

d) 3 minutes

11) Which of the following sign indicates increased work of breathing any children.

a) Chest retraction

b) Nasal flaring

c) Chest in drawing

d) All of the above

12) While PEWS scoring, a child has GCS of 6, score given is.

a) 1

b) 2

c) 3

d) 0

13) The early warning score is an excellent tool to recognize the seriously ill, child which vital essential vital signs are essential in recognizing the seriously ill child.

a) Blood pressure, respiratory rate, temperature, capillary refill time Heart rate.

b) Heart rate, blood pressure, capillary refill time respiratory rate.

c) Heart rate, blood pressure, temperature capillary refilling time.

d) Heart rate, respiratory rate, capillary refill time, blood pressure.

14) Appropriate use of PEWS requires

a) Consistent approach from all nurses

b) All well designed tool

c) Staff educated it the use of the tool

d) All of the above

15) What we are monitoring in PEWS.

a) Vital signs to be recorded

b) Vital signs to be scored and recorded

c) Selected vital signs to be recorded depending on the child's clinical condition

d) Vital signs to be scored and recorded escalated as required

16) While assessing the child nurse found that there is increased pulse rate then the nurse document this finding as.

a) Tachypnea

b) Hyper pyrexia

c) Arrhythmia

d) Tachycardia

17) PEWS scoring is performed only in

a) Critical care area only

b) General ward only

c) Outpatient department

d) All of the above

18) The nurse should be alert in which of the following parameters to modify rapid response team.

a) Acute change in neurological status or seizure

b) Tachycardia or Bradycardia

c) Sever Respiratory Distress

d) All of the above

19) Normal capillary refilling time is ----------

a) <2 seconds

b) 3 second

c) 4 seconds

d) 5 second

20) The rapid response does not apply to the following scenarios. In such case, the staff calls for a it includes.

a) All cardiac and respiratory arrests

b) Any collapse involving staff, visitors or outpatients

c) Emergencies in all patients

d) All of the above.

Key answer

1.	a
2.	a
3.	d
4.	d
5.	a
6.	a
7.	b
8.	d
9.	c
10	b
11	d
12	a
13	a
14	a
15	a
16	d
17	d
18	d
19	a
20	d

ANNEXURE-XI

MASTER SCORE SHEET

Age	Gender	Marital	Education	work exp
2	1	1	0	2
1	1	0	0	1
1	1	0	1	1
1	1	1	1	1
1	1	0	0	1
1	1	0	2	1
1	1	1	1	2
0	1	0	1	1
1	1	0	1	1
0	1	1	0	0
1	1	0	2	2
0	1	0	1	0
0	1	1	0	0
0	1	1	0	0
0	1	1	1	0
0	1	0	2	1
2	1	0	2	2
1	1	0	3	1
1	1	0	0	1
2	1	0	0	2
2	1	1	0	2
1	1	0	0	2
1	1	0	0	2
2	1	0	2	2
1	1	0	0	1
0	1	1	1	0

0	1	1	0	1
0	1	1	0	1
0	1	1	1	0
0	1	1	1	1
0	1	1	1	1
1	1	0	0	1
0	1	1	1	1
1	1	1	1	1
1	1	1	1	1
0	1	1	1	0
1	1	1	0	2
1	1	0	1	1
0	1	1	0	0
0	1	1	1	1

PRE-TEST KNOWLEDGE SCORE SHEET

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	A16	Q17	Q18	Q19	Q20	total score
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	10
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	10
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	1	0	11
1	1	0	0	1	1	0	1	1	1	0	0	0	0	1	1	0	0	1	0	10
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	1	0	11
1	1	0	1	1	1	0	0	1	1	0	0	1	0	1	1	0	0	1	1	12
1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	1	0	0	1	0	8
1	0	0	0	1	1	0	1	0	1	0	0	0	0	1	1	0	0	1	0	8
1	1	0	1	1	1	0	1	0	1	0	1	1	0	0	0	1	1	0	1	12
1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	6
1	0	0	1	1	1	0	0	1	1	1	0	0	1	0	1	1	1	1	1	13
1	0	1	1	1	1	0	1	1	0	1	0	1	0	0	1	0	0	0	0	10
1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	1	0	6
1	0	0	0	1	1	1	0	1	1	1	0	0	1	0	1	1	0	1	0	12
1	1	0	1	1	1	0	1	1	1	0	0	1	1	1	1	0	1	1	0	14
1	0	0	1	1	1	0	1	0	1	0	0	1	1	1	1	0	1	1	0	12
1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	14
1	0	1	0	1	1	0	1	0	1	0	1	0	0	0	1	1	0	1	0	10
1	1	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	7
1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	6
1	0	0	0	1	1	0	1	0	1	0	0	0	0	1	0	0	0	1	0	7
1	0	0	0	1	1	0	1	0	1	0	0	1	0	1	1	0	0	1	0	9
1	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	1	1	8
1	0	0	0	1	1	0	0	1	1	0	1	0	0	1	1	0	0	1	0	9
1	1	0	1	1	0	0	1	1	1	0	0	1	1	0	1	0	1	1	1	13

1	0	0	0	1	0	0	1	0	1	0	0	0	1	0	1	0	0	1	1	8
1	1	1	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	1	0	9
1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	8
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	1	0	11
1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	10
0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	7
1	1	1	1	1	1	0	1	1	0	0	1	0	0	1	1	0	0	1	1	13
1	1	0	1	1	1	0	0	1	0	0	0	1	0	1	1	0	0	1	0	10
0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	1	7
1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	1	1	1	1	0	14
1	1	0	1	1	1	0	1	1	1	0	0	1	0	0	1	0	0	1	0	11
1	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	0	7
1	1	1	0	1	1	0	0	0	0	1	0	1	0	0	1	1	1	0	1	11
1	0	0	1	1	1	1	1	0	0	1	0	1	1	0	1	1	1	1	0	13
1	0	0	1	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	13
38	19	5	16	38	32	4	30	27	29	10	4	20	10	17	35	13	12	31	10	400

POST-TEST KNOWLEDGE SCORE SHEET

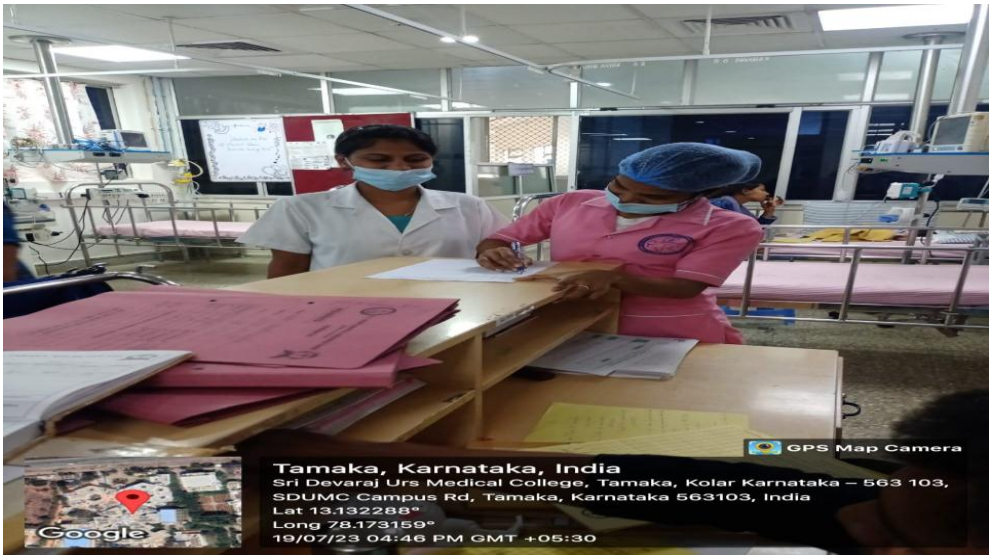
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	A16	Q17	Q18	Q19	Q20	total score
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	19
1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	0	1	15
1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	19
1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	17
1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	17
1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	17
1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	17
1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	16
1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	18
1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	16
1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	19
1	1	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	16
1	1	1	0	1	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	15
1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	0	15
1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	17
1	0	1	1	1	1	0	1	0	1	1	1	1	0	1	0	1	1	0	1	14
1	1	1	1	0	1	0	1	1	0	0	1	1	1	0	1	1	1	1	0	14
1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	18
1	1	1	1	0	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	17
1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	19

1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	18
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	18
1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	18
1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	17
1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	18
1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	1	17
1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	18
1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	15
40	38	33	35	34	34	27	38	33	35	35	34	38	30	35	38	38	38	36	33	702

ANNEXURE-XII

PHOTO GALLERY


GPS Map Camera
Tamaka, Karnataka, India
Sri Devaraj Urs Medical College, Tamaka, Kolar Karnataka – 563 103,
SDUMC Campus Rd, Tamaka, Karnataka 563103, India
Lat 13.132093°
Long 78.173222°
29/08/23 06:30 PM GMT +05:30
Google


GPS Map Camera
Tamaka, Karnataka, India
Sri Devaraj Urs Medical College, Tamaka, Kolar Karnataka – 563 103,
SDUMC Campus Rd, Tamaka, Karnataka 563103, India
Lat 13.132288°
Long 78.173159°
19/07/23 04:46 PM GMT +05:30
Google


GPS Map Camera
Tamaka, Karnataka, India
Sri Devaraj Urs Medical College, Tamaka, Kolar Karnataka – 563 103,
SDUMC Campus Rd, Tamaka, Karnataka 563103, India
Lat 13.132093°
Long 78.173222°
29/08/23 06:30 PM GMT +05:30
Google