

## Nursing Poster Award Abstracts from the 18<sup>th</sup> Emirates Critical Care Conference



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### ABSTRACTS

#### Poster Presentations

##### *Effectiveness of Prehabilitation on Improving Emotional Recovery of Patients Undergoing Open Heart Surgeries*

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**Background:** Cardiac surgery is considered an effective treatment for severe forms of cardiovascular diseases that cannot be treated by medical treatment or cardiac interventions. Although there are benefits of cardiac surgery, it is considered a major stressful experience for patients who are candidates for surgery. Prehabilitation improves patients' emotional recovery. When patients anticipate the postoperative sequence of events, they will prepare themselves to act in certain behaviors, identify their roles and actively participate in their own recovery, therefore, anxiety levels are decreased, and functional capacity is enhanced.

Prehabilitation programs prepare patients psychologically to cope with stress, anxiety, and depression associated with postoperative pain, fatigue, and limited functional capacity. There are limited studies investigating the effect of psychological prehabilitation on emotional outcomes.

**Aim of the study:** The study aims to determine the effect of prehabilitation interventions on the outcomes of patients undergoing cardiac surgeries.

**Methods:** Quasi-experimental study design was used to conduct this study. Sixty eligible and consenting patients were recruited and divided into two groups: the control and intervention groups (30 participants in each). One tool was utilized to collect the data for this study.

**Results:** Data analysis showed significant improvement in patients' emotional outcomes ( $p < 0.0001$ ) with the use of prehabilitation interventions.

**Conclusions:** Cardiac prehabilitation implemented daily by patients scheduled for elective open-heart surgery one week before surgery has been shown to improve patients' emotional outcomes.

##### *Shifting Metaphysical Paradigms in Nursing*

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**Background:** Our capacity to cohabit and engage in virtual worlds might be substantially enhanced by the Metaverse. Our current educational tools are problematic. On the phone, individuals don't hear their own voices. Video

chats don't allow face-to-face communication. Online gamers are represented by avatars, which are like action figures but aren't there. In the future, video chat and online gaming are merging to create a virtual presence comparable to face-to-face conversations, without the coffee. The Metaverse (or, more correctly, the technology that created it) may enable advanced learning affordances such as cross-disciplinary collaboration and virtual co-location.

**Methods:** This article will examine how socialising, learning, and exchanging ideas are evolving. Education is evolving. Instead of passively taking notes and tuning out, nurses must actively participate in digital XR environments and lectures. Classrooms are reducing but experiences and ideas are becoming the new normal. This article will discuss upcoming technologies like extremely immersive virtual worlds that will exponentially increase our digital footprint. The Metaverse exemplifies how existing technology may be upgraded to deliver more smooth, immersive, and omnipresent online nursing experiences. Context influences how we learn and remember. This new technology allows us to create whatever scenario we desire. This represents a significant shift in technology educational paradigms.

**Results:** Is there a place for education in this universe? Education technology is not a new phenomenon. It's going to take time. There will always be a crawl before a stroll in educational reform. Educators must first do professional research into the metaverse and its plethora of possibilities. The existing digital environment of districts must be evaluated. What means of communication do they use? Will it improve performance? Does it manage cognitive load? How does attention within a 360 digital curated space impact working and long-term memory? Is it fun and engaging?

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*Experience and Challenge of Emergency and Critical Care Nurses in Identifying and Managing Arrhythmia at the Emergency Department of Tikur*

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**Background:** Arrhythmia is a medical condition that is characterized by a disruption in the electrical activity of the heart/abnormal conduction, which can result in poor perfusion. It requires prompt detection and intervention. Nurses are first-hand to see a patient while in an emergency situation and have shown up at the emergency department (ED). However, there is a lack of understanding about the level of knowledge, experience, and challenges of arrhythmia identification and care provided to patients by emergency and critical care nurses (ECCN) in the Emergency Department of Tikur Anbessa Specialized Hospital (TASH) in Addis Ababa, Ethiopia.

**Aim:** The objective of this study was to explore the level of knowledge, and challenges in identifying and managing arrhythmia experienced by nurses working at the ED of TASH.

**Methods and Materials:** A qualitative phenomenology study was used. To recruit emergency and critical care nurses from TASH-ED purposive non-probability sampling techniques were used. In-depth interviews and observations were used to collect data. Prior to data analysis and interpretation, the collected data were transcribed, translated, and coded to make it simplified to analyze using open-code version-4 software. The raw data is kept on a password-protected computer so that valuable participant information is not lost. Thematic content analysis was used to identify and explain the core meaning of the collected data before writing the final report/finding.

**Results:** The experience of emergency and Critical care nurses in identifying and managing arrhythmias at the ED clearly showed nurses had difficulty properly reading ECG strips and

identifying arrhythmia due to limited reading practice, focused on routine activities, role confusion, fear of accountability, and hierarchical issue. Four themes recognized from ECCN experience are (1) knowledge gap, (2) trend, (3) lack of delineated scope of practice; and (4) lack of decision power in emergency patient management.

**Conclusion and recommendation:** The experience of emergency and critical care nurses in recognizing and treating arrhythmia revealed significant gaps. Thus, the TASH, the Ministry of Health's professional counsel, has recommended that nurses be given a scope of practice, receive ongoing professional development training, and be permitted to participate in the assessment and treatment of emergency patients actively.

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### ***Critical Care Nurses' Knowledge of Correct Administration Line Types for Common Intravenous Medications***

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**Background:** There is limited information in the literature on nursing knowledge on the requirements of intravenous administration lines for medications given in critical care. There is also a lack of well-researched information in the literature for IV-administration line-material compatibility.

**Objective:** Creation of a survey tool to assess the knowledge base of clinicians of administration sets for critical care medications, and to triangulate this against data for administration line consumption and individual medication-type utilization.

**Methods:** Data was drawn from a clinician knowledge questionnaire, a region-wide database of administered infusions, and regional data on standard and specialty IV-administration line consumption for one year from an Enterprise Resource Planning system log. The questionnaire

was validated with three control groups and then released for a general survey of critical care nurses. Correct answers were assessed by reference to literature and consensus between the team's pharmacists. Mapping of the three sources of information was undertaken to identify the gap between required usage and real usage, and the knowledge deficit that impacts on the disparity.

**Results:** Deviations by percentage from fully correct selections on the questionnaire were substantial in the control group and extensive in the test group. Confusion over the requirements for low-sorbing lines, light protection of infusions, and the requirement for filtration of specific solutions was evident. Specialty line requirement by medication type and actual consumption in the region showed a degree of disparity, with considerable under usage of lines.

**Conclusions:** There is no single source of truth for clinicians on the interactions of critical care IV medications and administration line materials. It is evident that nursing staff have limited knowledge of these requirements. To reduce clinical variability in this area it is desirable to have succinct, easy-to-access information available for clinicians to make decisions on which administration line type to use for each medication.

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### ***Best Practice on Control and Prevention of Blood Sample Error Due to Blood Clot/Haemolysis***

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**Introduction:** As per the study, globally the general incidence of haemolyzed samples in clinical laboratories differs broadly according to the clinical setting, geographical area, and facility type. Study shows the prevalence of

haemolytic specimens are as high as 3.3% of all routine samples, accounting for up to 40%–70% of all unsuitable samples identified. This is nearly five-times higher than other causes such as clotted samples, inadequate procedures for collection, insufficient volume, and incorrect samples. The American Society for Clinical Pathology established a 2% or lower benchmark for haemolysis rates among laboratory blood samples. It was challenged to control the haemolysis and blood clots in critical care areas where the blood sample collected by the registered nurse through the invasive line such as central line and arterial line. Haemolysis may occur in vivo and in vitro. The increased number (232) of sample error in 2018 taken to delay in differentiate diagnosis, delay in treatment, and increase nurse’s workload. Sample error occurs from the point of collection and then continue up to the time of analysis.

**Aim:** Reduction of incident for blood clotting and haemolysis related to blood sampling from invasive line.

**Methodology:** Systematic review was done in intensive care units by using the analysis tool. The problems and process variation identified through analysis tool includes 1. Improper sample collection such as too slow or too fast withdraw of blood sample from CVC or arterial line, collection of blood sample with mix of drugs and without proper flush of the lines with normal saline, use of high vacuum upon drawing blood sample, use of smaller gauze needle to transfer the blood sample from syringe to blood tubes; 2. Handling blood sample such as Improper use of blood tubes- not in sequence, Improper mixing of blood tube; 3. Transportation of sample such as delay in transportation, use of pneumatic tube. Based on the identified problems and evidence based best practice, staff educated as listed in below chart:

Title	Content
Staff knowledge and skill	<ul style="list-style-type: none"> <li>Education on blood collection tube guidelines</li> </ul>

	<ul style="list-style-type: none"> <li>Selection of line with good backflow</li> <li>Technique of the collection through video presentation</li> </ul>
Material	<ul style="list-style-type: none"> <li>Use standard 10ml syringe to collect sample from CVC</li> <li>Not to use needle for transferring the sample into blood tubes</li> <li>Use Vacutainer with adaptor as much as possible</li> </ul>
Time	<ul style="list-style-type: none"> <li>Transport the sample to laboratory within 30minutes</li> </ul>
Sample collecting order	<ul style="list-style-type: none"> <li>Follow the blood collection tube guidelines</li> </ul>
Method of transportation	<ul style="list-style-type: none"> <li>Use Pneumatic system for group of samples to prevent the forceful shaking and high movement of blood sample inside the tube</li> <li>Sample transport through a person</li> </ul>

**Outcome:** At the end of the December 2019, by comparing the number of the haemolysed sample in 2018 and 2019 that the result provides the significant reduction in sample error. Total of 54 sample investigated, 26 sample were haemolysed due to the quality of sample collection, 26 sample due to improper handling of blood sample, two sample due to delay in transportation. By comparing 232-sample error in 2018 and 108 in 2019 shows 53.45% of significant improvement as well as best control in sample error.

**Conclusion:** Most of the studies reviewed were conducted in intensive care unit provides the potential solution for significantly reducing the haemolysis that requires, adherence to blood collection tube guidelines, Selection of line with good backflow, Use standard 10ml syringe to collect sample from CVC , not to use needle for transferring the sample into blood tubes, use Vacutainer with adaptor, Transport the sample to laboratory within 30minutes, Use Pneumatic system for group of samples to prevent the forceful shaking and high movement of blood sample inside the tube. Additional studies are needed to provide more evidence of practice effectiveness.