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IMPLEMENTATION OF ORAL CARE FOR PATIENTS ON MECHANICAL VENTILATION IN THE PEDIATRIC INTENSIVE CARE UNIT (PICU) OF DR. CIPTO MANGUNKUSUMO NATIONAL GENERAL HOSPITAL

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ABSTRACT

Background: The Pediatric Intensive Care Unit (PICU) provides intensive care for critically ill pediatric patients. Mechanical ventilation supports respiratory needs but increases the risk of Ventilator-Associated Pneumonia (VAP). Implementing oral care is essential to reduce bacterial colonization and prevent complications. However, oral care practices in PICUs are often inconsistent, lacking clear Standard Operating Procedures (SOPs), and frequently neglect important aspects such as lip moisture. Objective: This study aims to explore the implementation of oral care for pediatric patients on mechanical ventilation in the PICU. Methods: The study employed a qualitative design with a phenomenological approach. Data were collected through in-depth interviews with 10 experienced PICU nurses and analyzed using thematic analysis to identify key themes related to oral care implementation. Results: Oral care was performed routinely during each shift but lacked detailed technical guidance. The absence of SOPs resulted in variations in frequency and timing. Mouth cleanliness evaluation was conducted subjectively without standardized assessment tools. Lip moisture was often overlooked, leading to cases of chapped lips among patients. Nurses highlighted the need for guidelines, structured training, and tools like checklists to improve the consistency and quality of oral care. Conclusion: Oral care implementation in the PICU faces challenges such as inconsistent practices, the absence of SOPs, and a lack of standardized evaluation systems. Evidence-based guidelines, training, and evaluation tools are needed to enhance the consistency and effectiveness of oral care, thereby reducing VAP risk and improving the quality of life for patients in the PICU.

Keywords: pediatric intensive care unit, oral care, ventilator associated pneumonia

Introduction

Pediatric Intensive Care Unit (PICU) is a specialized hospital unit designed to provide intensive observation, care, and therapy for pediatric patients suffering from life-threatening illnesses, injuries, or complications (Suwardianto, 2020). One of the standard pieces of equipment in PICUs is the mechanical ventilator, which supports the patient's breathing needs through an Endotracheal Tube (ETT) or tracheostomy (Suwardianto, 2020). However, the placement of an ETT can serve as a gateway for bacteria into the lower respiratory tract, potentially compromising the body's ability to filter and warm inhaled air. Impaired cough reflexes, bacterial colonization in the trachea, and secretion accumulation further increase the risk of Ventilator-Associated Pneumonia (VAP) (Shidiq et al., 2021).

Oral care aims to reduce microbial colonization in the oropharynx and lower the risk of aspiration in patients using mechanical ventilation. This technique requires careful attention to procedures, equipment, cleaning solutions, and implementation frequency (Shidiq et al., 2021). While oral care is routinely performed in PICUs, it often neglects the use of lip moisturizers to maintain hydration. Additionally, the absence of a systematic assessment for oral hygiene means oral care is commonly performed only in the morning. Consequently, some intubated patients experience chapped lips and prominent tongue papillae due to suboptimal oral hygiene. The lack of a clear Standard Operating Procedure (SOP) for oral care implementation also leads to inconsistent practices among nurses.

Inconsistent oral care practices for mechanically ventilated patients can negatively impact patient health. Poor oral hygiene can lead to gum infections, dental plaque formation, and bacterial biofilm development rich in pathogenic organisms (Shidiq et al., 2021). These conditions increase the risk of systemic infections, prolong PICU stays, and worsen patients' quality of life during treatment. Suboptimal oral care-related VAP further necessitates prolonged intensive care, including extended use of mechanical ventilation (Bouadma et al., 2015).

Poor oral health in PICU patients can cause pain, discomfort, and even difficulty eating or drinking, which lowers their quality of life during hospitalization. Moreover, inconsistency in oral care implementation may influence patients' and families' perceptions of healthcare service quality, reducing trust in the healthcare facility. To minimize complications associated with mechanical ventilation, it is crucial for healthcare professionals in PICUs to implement standardized, structured, and consistent oral care protocols. Clear SOP implementation will improve care quality, reduce infection risks, and expedite the recovery of patients treated in PICU.

Method

This study employed a qualitative design with a phenomenological approach to explore the implementation of oral care for pediatric patients on mechanical ventilation in the PICU. This design was chosen to gain a deeper understanding of the experiences, perspectives, and practices of nurses in providing oral care to critically ill children. The phenomenological approach allowed researchers to uncover the deeper meaning behind oral care practices within a complex context.

The study sample consisted of ten participants selected through purposive sampling. Participants included nurses with a minimum of two years of experience working in the PICU and directly involved in the care of pediatric patients on mechanical ventilation. These inclusion criteria ensured that participants possessed relevant knowledge and skills related to the implementation of oral care.

Data collection was conducted through in-depth interviews using a semi-structured interview guide. The interviews were designed to explore the technical aspects, barriers, and supporting factors in oral care practices. Each interview lasted 30 to 60 minutes, was audio-recorded with participant consent, and conducted in a comfortable setting to ensure privacy and focus.

The data from the interviews were analyzed using thematic analysis. The process began with verbatim transcription of the interview recordings, followed by thorough reading of the transcripts to identify key themes. The data were then coded and grouped into themes that reflected the practices, perceptions, and challenges related to oral care implementation.

Data validity was maintained through triangulation, member checking, and an audit trail. Triangulation involved comparing data from various participants to ensure consistency of findings. Member checking engaged participants in the verification process to ensure that the interpretations aligned with their experiences. The audit trail documented all research processes in detail, ensuring transparency and accountability.

Results

This study provides an overview of the implementation of oral care for patients on mechanical ventilation in the PICU. Based on in-depth interviews with nurses, it was found that oral care is routinely performed during each shift. Most nurses stated that oral care is considered a primary task in maintaining the hygiene and health of intubated patients. However, the practice lacks detailed regulation, making its implementation dependent on individual habits and experiences.

Some nurses explained that oral care is performed either at the beginning or end of their shifts, depending on time availability and patient needs. However, there is no established standard regarding the timing or the number of oral care sessions required daily. This has led to variations in practice among nurses, particularly in determining the intervals for oral care provision.

The interviews also revealed that there is no specific assessment system or standardized tool used to evaluate the condition of patients' mouths before or after oral care. Many nurses rely solely on visual observation to assess oral cleanliness, such as checking for plaque, food residues, or lip moisture. The absence of assessment tools or forms results in subjective evaluations based on individual nurses' perceptions.

Additionally, while oral care is performed regularly, attention to lip moisture is often neglected. Lip moisturizers are not consistently used, leading to instances of dry or chapped lips among patients. Although nurses recognize the importance of maintaining lip hydration, they lack specific guidelines on safe and appropriate products for PICU patients.

Inconsistencies in oral care practices are also evident in the frequency of implementation. Some nurses reported performing oral care more frequently for critically ill patients, while others adhered to shift schedules without considering patient conditions. This indicates that oral care has not yet been fully integrated with individual patient assessments, which should form the basis of care provision.

The nurses highlighted the need for guidelines or Standard Operating Procedures (SOPs) to enhance the consistency and quality of oral care in the PICU. They expressed a desire for structured training and support tools such as checklists or assessment forms to ensure oral care is performed in accordance with established standards. Such measures could minimize complications like Ventilator-Associated Pneumonia (VAP) and improve patients' quality of life.

Overall, the findings of this study indicate that the implementation of oral care in the PICU faces several challenges, particularly regarding standardization, evaluation, and consistency. These inconsistencies require attention from hospital management to ensure that oral care is not only routine but also effective and tailored to patient needs.

Discussion

The findings of this study reveal a gap between oral care practices in the PICU and evidence-based standards. While performing oral care every shift reflects nurses' awareness of the importance of maintaining oral hygiene for mechanically ventilated patients, the inconsistency in timing and frequency indicates the lack of clear guidelines. This aligns with Shidiq et al. (2021), who reported that inconsistent oral care practices could increase the risk of bacterial colonization and Ventilator-Associated Pneumonia (VAP).

The absence of standardized tools for assessing patients' oral hygiene poses another challenge in evaluating the effectiveness of oral care. According to Bouadma et al. (2015), systematic assessments of oral hygiene are crucial for early detection of potential infections and preventing further complications. Relying solely on visual observation without standardized tools or assessment forms can result in significant variability in evaluating patients' oral conditions, ultimately affecting the quality of care.

Moreover, the lack of attention to lip moisture highlights the need to enhance nurses' understanding of comprehensive oral care components. Previous studies indicate that routine use of lip moisturizers can prevent soft tissue damage and improve patient comfort during intubation. Incorporating complete oral care techniques, including lip moisturization, can reduce the risk of systemic infections and other complications associated with poor oral hygiene.

The variability in the frequency of oral care, which often depends on the patient's condition, reflects decision-making based on experience rather than standardized guidelines. While flexibility in care is necessary to meet individual needs, the absence of Standard Operating Procedures (SOPs) can lead to uncertainty in practice. Suwardianto (2020) emphasized that SOPs serve as essential guides to ensure consistency and efficiency in healthcare delivery.

The nurses' expressed desire for structured guidelines and training reflects the need to strengthen healthcare providers' capacity in the PICU. Developing clear, evidence-based SOPs can provide uniform guidance, enhance consistency in practice, and reduce variability in oral care implementation. Structured training and tools such as checklists or assessment forms can further improve nurses' awareness and skills, enabling them to deliver optimal oral care.

With the implementation of SOPs and systematic evaluation tools, nurses can provide more effective oral care, reduce the risk of VAP, and improve patients' quality of life. These evidence-based practices can also enhance patients' and families' trust in the quality of healthcare services provided by the hospital.

Conclusions

This study highlights that the implementation of oral care for mechanically ventilated patients in the PICU faces several challenges, particularly concerning inconsistencies in the timing intervals of oral care among nurses and the absence of a systematic oral condition assessment system. While nurses routinely perform oral care during each shift, there are no standardized timing guidelines, leading to variability in the frequency of care across different nurses. Furthermore, attention to lip moisture is often neglected, and oral hygiene evaluations remain subjective due to the lack of systematic tools or assessment forms.

These findings emphasize the urgent need for standardized guidelines, structured training, and supporting tools such as checklists to ensure consistency and quality in oral care practices. Such measures could help minimize the risk of complications, including Ventilator-Associated Pneumonia (VAP), and improve the quality of life for patients in the PICU.

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