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Revisiting oral care practices to Prevent ventilator associated pneumonia and monitoring the adherence

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Abstract
Background: Ventilator associated pneumonia is the most common nosocomial infection in patients being treated with mechanical ventilation. Ventilator-associated pneumonia (VAP) is one of the most frequent ICU-acquired infections and a leading cause of death among patients in Intensive Care Unit (ICU).
Method: This study is a systematic literature review. The databases searched included Web of Sscience, Cumulative Index to Nursing and Allied Health. Assigned nurses were observed while performing oral care.
Results: This study has found that, registered nurses were performing oral hygiene with minimal skillset. The intervention developed has helped nurses caring for patients on ventilator acquire better understanding & skill.
Conclusion: Good oral care reduces VAP in the ICU. A recommendation for practice is the development and implementation of an oral health protocol. Guidelines can then be developed to inform health care professionals of the best oral care product and application technique to use in different oral health circumstances in the prevention of VAP. Implementing an oral care protocol and nurse education program in the ICU is essential if VAP rates are to be reduced.

Keywords: Ventilator-associated pneumonia, oral care, ICU, nurse education, protocol implementation

Introduction
Ventilator-associated pneumonia (VAP) is one of the most frequent ICU-acquired infections and a leading cause of death among patients in Intensive Care Unit (ICU). Ventilator-associated pneumonia (VAP) is defined as pneumonia or infection in lung parenchyma acquired in patients after invasive mechanical ventilation after 48–72 hours. VAP is the most common ICU acquired pneumonia among invasive mechanically ventilated patients. VAP is recognized as a major issue worldwide, and common healthcare-associated infection(HAI) among developing countries. Nosocomial pneumonia has been increasingly studied and the relationship between VAP and microorganisms from the oral cavity has been progressively recognized. VAP is a form of nosocomial pneumonia that happens in patients receiving mechanical ventilation for longer than 48 hours.

Need for the Study
The purpose of this study was to reduce the Ventilator associated Pnemonia in Suchirayu Hospital, Hubli.

Objectives
- To assess the existing practice of oral care by registered nurses.
- To introduce the revisited techniques of oral care among registered nurses.
- To assess the post interventional practice of oral care by registered nurses.
- To compare the pre and post practice of oral care by registered nurses.

Materials and Methods

Research approach	Evaluative quantitative approach
Research design	Interventional design
Setting	ICU's (MICU1, MICU2, CTVS ICU)
Sample and sample size	Registered Nurses assigned to Ventilated patients N=35
Sampling technique	Purposive Sampling.
Tools/Instruments checklist	Structured oral care observation checklist used in the study
Method of data collection	Assigned nurses were observed while performing oral care.

Sampling Criteria

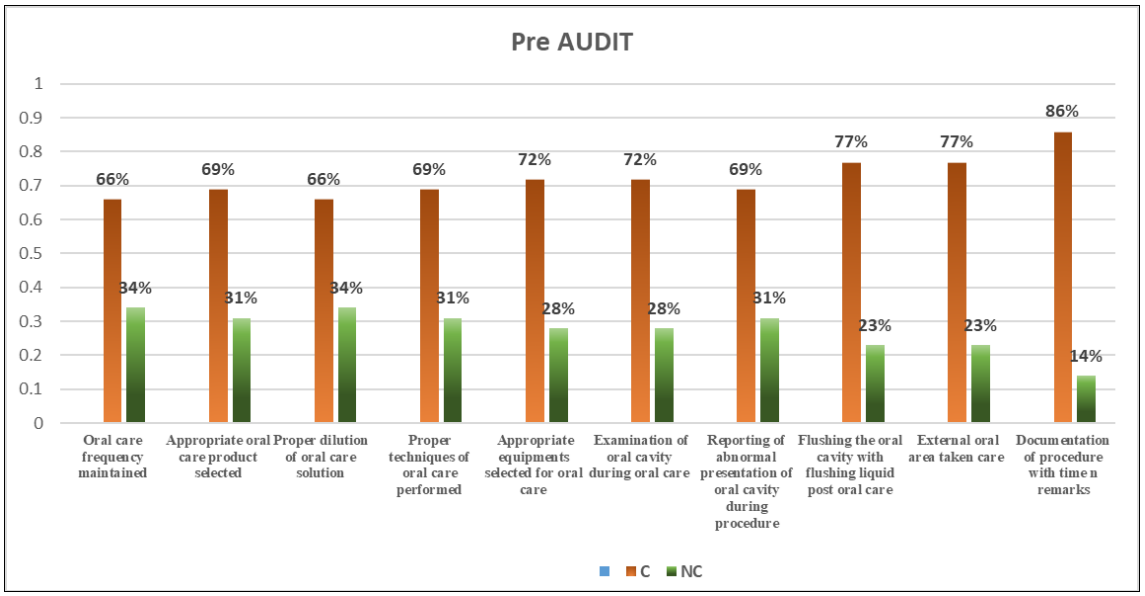
Inclusive: Patients on mechanical ventilation for at least 48 hrs.

Exclusive Criteria: Incident rate of VAP with RCA

Pre-Audit Data

Table 1: Pre-Audit Data

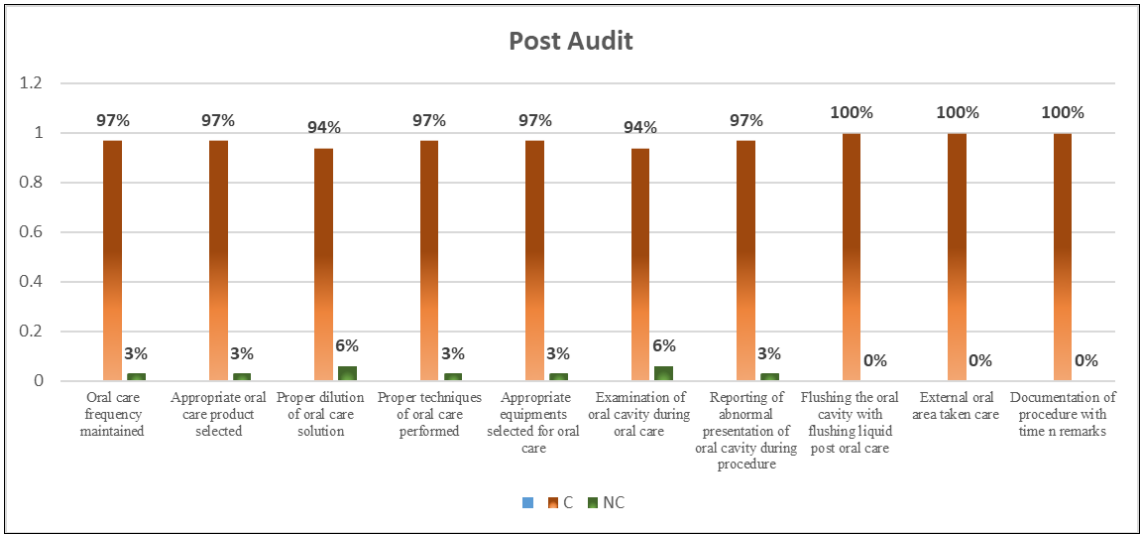
Parameters	C	NC
Oral care frequency maintained	66%	34%
Appropriate oral care product selected	69%	31%
Proper dilution of oral care solution	66%	34%
Proper techniques of oral care performed	69%	31%
Appropriate equipments selected for oral care	72%	28%
Examination of oral cavity during oral care	72%	28%
Reporting of abnormal presentation of oral cavity during procedure	69%	31%
Flushing the oral cavity with flushing liquid post oral care	77%	23%
External oral area taken care	77%	23%
Documentation of procedure with time n remarks	86%	14%



Pre-Audit Data Findings

The study data revealed that oral care frequency has compliance of 66%. Nurses were not able to select a proper product for the oral care, technique of oral care and reporting of abnormal presentation of oral cavity during procedure was not done which has a compliance of 69%. Equipment used for the procedure and oral cavity examination was missed in many cases i.e 72%. Flushing of oral cavity and external oral area care was done 77% and documentation of the oral care was missed about 14%.

Parameters	C	NC
Oral care frequency maintained	97%	3%
Appropriate oral care product selected	97%	3%
Proper dilution of oral care solution	94%	6%
Proper techniques of oral care performed	97%	3%
Appropriate equipment's selected for oral care	97%	3%
Examination of oral cavity during oral care	94%	6%
Reporting of abnormal presentation of oral cavity during procedure	97%	3%
Flushing the oral cavity with flushing liquid post oral care	100%	0%
External oral area taken care	100%	0%
Documentation of procedure with time n remarks	100%	0%

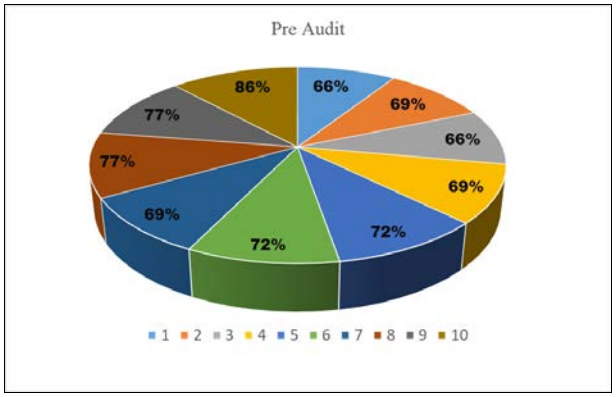


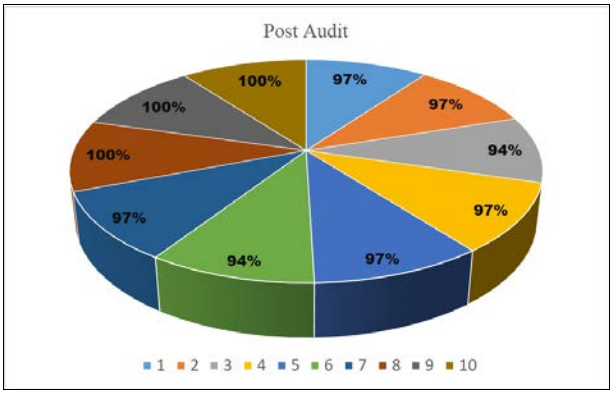
Post-Audit Data Findings

Post audit data findings revealed that the oral care frequency was maintained each shift wise which shows the 97% of compliance. The product which is used for the oral care was appropriate (97%). Dilution technique was maintained in 97%, flushing of oral cavity, care of external oral area and documentation of the procedure shows the improvement of 100%.

Comparison Pre & Post Audit

Parameters	PRE	POST
Oral care frequency maintained	66%	97%
Appropriate oral care product selected	69%	97%
Proper dilution of oral care solution	66%	94%
Proper techniques of oral care performed	69%	97%
Appropriate equipments selected for oral care	72%	97%
Examination of oral cavity during oral care	72%	94%
Reporting of abnormal presentation of oral cavity during procedure	69%	97%
Flushing the oral cavity with flushing liquid post oral care	77%	100%
External oral area taken care	77%	100%
Documentation of procedure with time n remarks	86%	100%





Finding of the study

This study has found that, registered nurses were performing oral hygiene with minimal skillset. The intervention developed has helped nurses caring for patients on ventilator acquire better understanding & skill.

Discussion

Preventing VAP through oral care is essential to avoid the development and spread of antibiotic and multi-drug-resistant pathogens. Research has highlighted that oral care is an important intervention in the reduction of VAP. Implementation of oral care protocols and/or education programs has demonstrated positive impact on VAP rates No consensus was found among studies on oral hygiene practices and protocols.

Conclusion

Implementation of oral care protocols and nurse education programs reduced VAP. Although chlorhexidine was the most popular oral care product, no consensus emerged on concentration or protocols for oral care. Implementation of an oral care protocol, ongoing nurse education, and evaluation were important in reducing the incidence of VAP. Oral health can be compromised by critical illness and mechanical ventilation. It can also be influenced by nursing attentions. Therefore better skilled nurses can make better outcomes.

Conflict of Interest
Not available

Financial Support
Not available

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