



Assessment of Nurse's level of knowledge, attitude and practice of oral care in Pediatric and Adult Intensive Care Units, Asmara, Eritrea, East Africa.

Zewdi Amanuel Dagnew^{1*}, Yohana Yebio Tewelde¹, Yobiel Zemhret Tesfamichael¹, Thomas Haile¹, Yohannes Oukbay¹, Desale Tewelde Kahsay¹, Yemane Fessehaye Berhe¹, Isayas Afewerki Abraham²

¹Department of Nursing, Orotta College of Medicine and Health Sciences, Asmara, Eritrea

²Department of Community Medicine and Primary Health Care, Orotta College of Medicine and Health Sciences, Asmara, Eritrea.

***Corresponding author: Zewdi Amanuel Dagnew**

Email: zewdiamanuel2050@gmail.com

ABSTRACT

Background

Poor knowledge and attitude have the potential to compromise the quality of patient care and result in unsafe practice. The aim of the study was, therefore, to assess the knowledge, attitude, and practice of pediatric and adult ICU nurses to wards oral care.

Methods

A cross-sectional quantitative and observational design was applied at the generalized pediatric and adult ICUs. Data for knowledge and attitude level were collected from all (n=30) diploma nurses and health assistants through face to face interview using pretested and structured questionnaire. In the other hand, data for the assessment of practice was collected from all participants through observational checklist. Descriptive analysis and spearman rank correlation coefficient tools were performed to analyze the data using SPSS (Version 20).

Result

Of the total, 73.3% were diploma nurses and 26.7% were health assistants. Majority of the nurses were having more than 50% knowledge score. Of the total participants, 96.6 % of the nurses agreed that oral cavity assessment is nurse's responsibility and 80% were received adequate training to provide oral care. Moreover, the majority (97%) of participants perceived oral care to be a high priority. However, the majority (67%) of participants mostly used normal saline and gauze for oral care. In addition, around half (48.3%) of the participants reported that there was no any oral care protocol or guidelines in the hospital. Nevertheless, there is no significant difference in knowledge between ICU nurses with different educational level ($p=0.398$) and years of working experience was found ($p=0.273$). In the other hand, during the observational study, oral cleaning was performed using normal saline and gauze. From those observed, 90% did oropharyngeal suctioning for a patient in need.

Conclusion

Even though nurses are knowledgeable and ranked oral care a high priority, the practice varies among the nurses. The existence of various oral care practices indicate that there is a need of a standardized oral care protocol or guidelines that includes tooth brushing and use of chlorohexidine mouthwash.

Keywords: Nurses, Knowledge, Attitude, Practice, Oral care, ICUs, Eritrea

INTRODUCTION

Background

Oral care is an important component of intensive care nursing but is often given low priority when compared with other critical care practices [1]. In the intensive care unit, the mouth often facilitates entry of life sustaining interventions; such as endotracheal tube, for ventilation and orogastric tube for enteral feeding. Unfortunately, these interventions require the patient to maintain an open mouth [2] and impair the natural airway defenses [3]. This vulnerable position, in combination with other treatments, can contribute to a rapidly deteriorating oral state. Hence patients become dependent on nurses [4] for the alleviation of tube-related discomfort [5] thirst [6], oral lesions [7] and accumulation of saliva, sputum and oral bacteria [8].

The oral flora of critically ill adults differs from that of healthy adults and contains organisms that can rapidly cause pneumonia. Within 48 hours of admission, the composition of the oropharyngeal flora of critically ill patients undergoes a change from the usual predominance of gram-positive streptococci and dental pathogens to predominantly virulent gram-negative organisms. Therefore if the critically ill or intubated patient does not receive effective, comprehensive oral hygiene, then the patient may develop Hospital Associated Pneumonia/Ventilator Associated Pneumonia (HAP/VAP) within hours or days [9].

Reducing the number of microorganisms in the mouth reduces the pool of organisms available for translocation and colonization of the lung. Previous research indicates that vigorous oral hygiene is necessary to reduce oral colonization. And this can be done through comprehensive oral care [10]. The recommended interventions of comprehensive oral care for all hospitalized patients includes, written training and protocol, initial admission oral assessment, dental plaque removal, toothpaste, alcohol-free antiseptic mouth rinse, avoiding lemon glycerin swabs, daily oral assessment, elevation of head, oral and orotracheal suctioning and oral mucosa moisturizer (CDC guidelines). According to the American Association of Critical Care Nurses (AACN, 2006), comprehensive oral care program for patients in critical and acute care settings who are at high risk for healthcare-associated pneumonia should include brushing teeth, gums and tongue at least twice a day with a soft pediatric or adult toothbrush and moistening oral mucosa and lips every two to four hours [9].

ICU nurses are in the best position to put the above guidelines into practice as they are at patient's bedside 24 hours a day and therefore they play an important role in the prevention of HAP/VAP. Nevertheless, nurses need to have an awareness of the problem as well as knowledge on the above guidelines so as to adhere to such practices. Skilled and knowledgeable nurses are extremely important and needed to make appropriate decisions in patient care and minimize risks to patients. ICU Nurses knowledge should bring confidence to make appropriate decisions and prevent poor outcomes in the recovery of critically ill patients.

However, in Eritrea no protocols and guidelines are found on oral care in critically ill patients. Many of the Eritrean health institutions do not incorporate intensive care in their curricula especially oral care. To our knowledge there is no any related study done in the country, focusing oral care in intensive care unit.

Objectives of the Study

General objective

To assess the knowledge, attitude, and practice of pediatric and adult ICU nurses to wards oral care.

Specific objectives

- To assess if nurses' knowledge of prioritizing oral care measures for critically ill patients is adequate.
- To identify the attitude of nurses on prioritizing oral care measures for critically ill patients
- To describe intensive care nurses' practice on the quality of oral care in intensive care unit.
- To identify the type of oral care given in critically ill patients.
- To assess if there is any association between years of working experience, and educational level of ICU nurses to wards oral care in critical ill patients.

Research methodology

Study Design

A cross-sectional quantitative and observational design was used for this study.

Study Population

The population in this study was diploma nurses and health assistants working in generalized pediatric and adult ICUs. The total number of study participants was 30 nurses. ICU nurses and health assistants were involved in this study because they carry out most of the activities in the units. They also spent much of their working hours with patients compared to other health care providers.

Inclusion criteria

- ❖ Diploma nurses and health assistants who were actively working in Pediatric and Adult ICUs during the study period.
- ❖ Nurses who consent to participate in the study.

Exclusion criteria

- ❖ Health practitioners other than diploma nurses and health assistants.
- ❖ Nurses who do not consent to participate in the study.
- ❖ All nurses who were not at work place during data collection period like those in all time school schedule and those on annual leave.

Data collection tool

A structured questionnaire was developed to assess the knowledge of the participants whereas the liker's rating scale was used to collect the attitude level of the participants. Moreover, observational checklist was used to collect their practice level.

In general the questionnaire had four parts.

- Part A: Respondent profile
- Part B: Knowledge of nurses to wards comprehensive oral care.
- Part C: Attitude of nurses to wards comprehensive oral care.

- Part D: The current practice, frequency and type of oral care, each participant observed for about 2 hours, within 2 hours, nurses were expected to care patients in observed items. Observed participants were selected as per the WHO protocol which states that at least 25% of the study participants should be taken as a sample, hence 10 participants were observed (National survey guidelines).

Data collection approach

The questionnaire was in English as the nurses in Eritrea are trained through English language. At first consent was taken from each participant voluntarily and they were asked to fill the questionnaire and given chance to ask for any clarification

Pretest

Before data collection a pretest was done to 7 ICU nurses regarding the questions to identify any problem that might potentially affect the research process. Data was collected for three weeks, where good rapport was maintained in the whole period of data collection. The pre-designed questions that were not easily understood by the

participants were simplified after pre-testing the questionnaire.

DATA ANALYSIS

Descriptive statistics were used to interpret the demographic data: age, sex, years and working experience in ICU. SPSS version 20 was the statistical program used to analyze the data. Data was collected by the researchers daily then checked and coded. Frequency distributions, pie chart and cross-tables were used to provide an overall and coherent presentation and description of data. In the current study *P*-value less than or equal to 0.05 was considered as statistically significant.

RESULTS AND FINDINGS

Characteristics of the participants

Thirty ICU nurses were recruited, about 12 (40%) were between the age group of 20-24 years, 14 (46.7%) between 25-29 years and 4 (13.3%) >30 years. Majority of the participants were female 21 (70%) and 9 (30%) were male. 22(73.3%) had diploma in nursing, 8 (26.7%) had certificate in nursing. Majority of ICU nurses 14 (46.7%) had 1-5 year work experience in ICU, 11 (36.7%) less than 1 year and 5 (16.7%) were working in ICU 5-10 years (Table 1).

Table 1: Demographic data of the study population

	Number	Percent
Age category		
20-24	12	40
25-29	14	46.7
30+	4	13.3
Sex		
Male	9	30
Female	21	70
Level of education		
Health assistant	8	26.7
Diploma nurse	22	73.3
Experience in ICU ward		
<1year	11	36.7
1-5 year	14	46.7
5-10 year	5	16.7
Total	30	100

Level of knowledge among ICU Nurses

The knowledge scored and their levels were as follows: of the ICU nurses 30% scored 70% - 100% leveled excellent, 46.7% scored between 60% - 69% leveled very

good, 10% scored between 50% - 59% leveled good, 13.3% scored 40%- 49% leveled average and none of them scored between 0% - 39% (Figure-1).

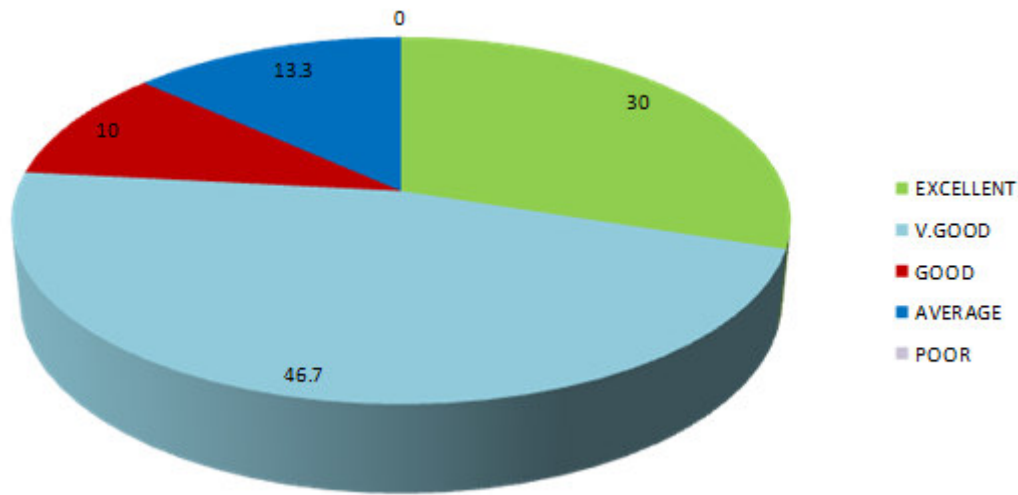


Figure 1 : Percentage distribution of knowledge level

Level of Knowledge and Educational level

When the level of knowledge and educational background was assessed the result shows that; out of the total health assistants 50% scored an excellent mark, 37.5% scored very good mark while 12.5% were leveled well.

From the diploma nurses 22.7% scored an excellent mark, 50% very good, 18.2% scored good mark and the rest 9.1% scored average mark. None of the study participants scored poor (Figure 2).

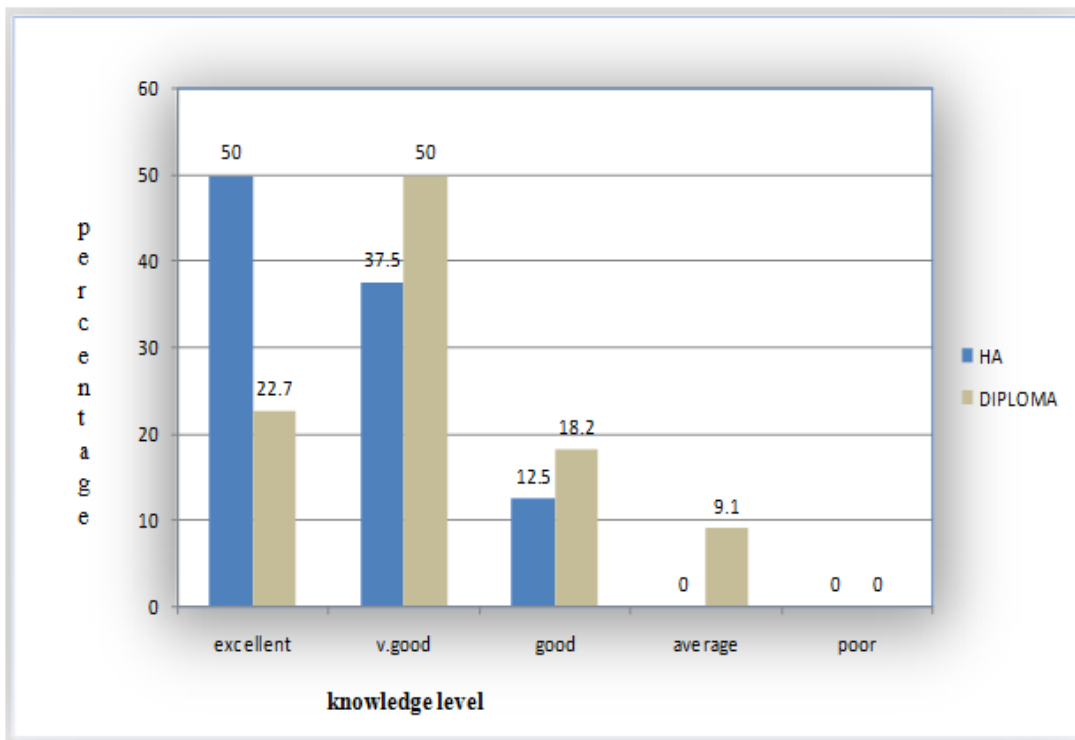


Figure 2: Percentage distribution of knowledge and educational level.

Level of Knowledge and Work Experience

The distribution of knowledge and working experience of the study participants, reveals that 45.4% of those with working experience less than one year (n=11) scored an excellent mark, 18.2% scored very good, 18.2% scored good, 18.2% got an average mark while none of the

participants scored poor. Majority of the participants with work experience 1-5 years (n=14) scored very good mark (50%), 28.5% scored excellent and 7.2% and 4.3% scored good and average, respectively. 100% of those with work experience 5-10 years (n=5) scored very good (Figure 3).

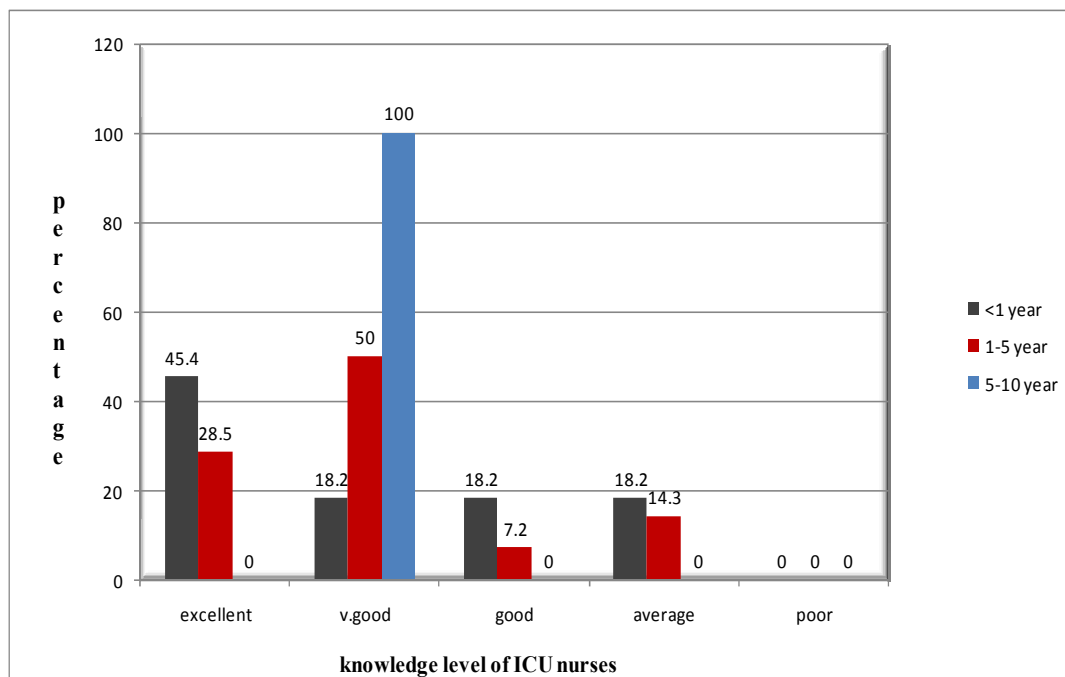


Figure 3: Percentage distribution of knowledge and work experience

Availability of Protocol or Guidelines

In the final question, participants were asked whether the unit in which they worked had an oral care protocol or guideline. 14 (48.3%) stated that they had no oral care protocol/ guideline, and 14 (44.8%) said that they used WHO guidelines on doing oral care and the rest (6.9%) use nursing procedure protocol.

Factors associated with knowledge

The research tried to find correlation between educational back grounds and knowledge level of participants as well as participants working experience and their knowledge level. The result revealed that, there is no significant difference in knowledge between ICU nurses with different educational level ($p = 0.398$) and years of working experience was found ($p = 0.273$) (Table 2).

Table 2: Factors associated with ICU nurses knowledge

Factors	Number	P value
EDUCATIONAL LEVEL		
Health Assistant	8	0.398
Diploma nurse	22	
WORK EXPERIENCE		
<1 year	11	0.273
1-5 years	14	
5-10 years	5	

Level of attitude among ICU Nurses

Almost all the nurses (96.7%, n=29) perceived oral care as a high nursing priority. Twenty-two nurses (72.4%) found cleaning the mouth an unpleasant task and 16 (53.3%) found it a difficult task to perform. A small number of the participants (21.4%, n=6) found that the mouths of ICU patient's became worse no matter what the nurses did.

Twenty-four (80%) believed that they had been given adequate training to provide oral care. Majority of the nurses (96.7%, n=29) believed that oral care has important role in infection prevention. Almost all the nurses 29 (96.6%) believed that oral assessment is the responsibility of a nurse (Table 3).

Table 3: Attitude regarding oral care

	Strongly agree	Some what agree	Somewhat disagree	Strongly disagree
Oral care is very high priority	46.7%	50.0%	3.3%	0.0%
Cleaning the oral cavity is an unpleasant task	20.7%	51.7%	10.3%	17.3%
The mouth of ICU patients gets worse no	7.1%	14.3%	28.6%	50.0%

matter what I do				
I have been given adequate training to provide oral care	36.7%	43.3%	10.0%	10.0%
The oral cavity is difficult to clean	16.7%	36.6%	30.0%	16.7%
Oral care has important role in infection prevention	76.7%	20%	0.0%	3.3%
It is nurses responsibility to asses oral status a patient	83.3%	13.3%	3.4%	0.0%

Practice towards oral care

Nurses responded that they used more than one method for practicing oral care (Figure 4). However, the methods for oral care and the frequency of use varied between nurses in the same unit. Normal saline with gauze was the primary material used by the majority (66.7%, n=20) of nurses.

Seven nurses (23.3%) practiced oral care using gauze swab in combination with normal saline and lemon. Only 10% of the nurses stated that they used tooth paste with brush. However, all the nurses reported that the hospital did not supply the toothbrushes for patients. None of them used chlorhexidine mouthwash.

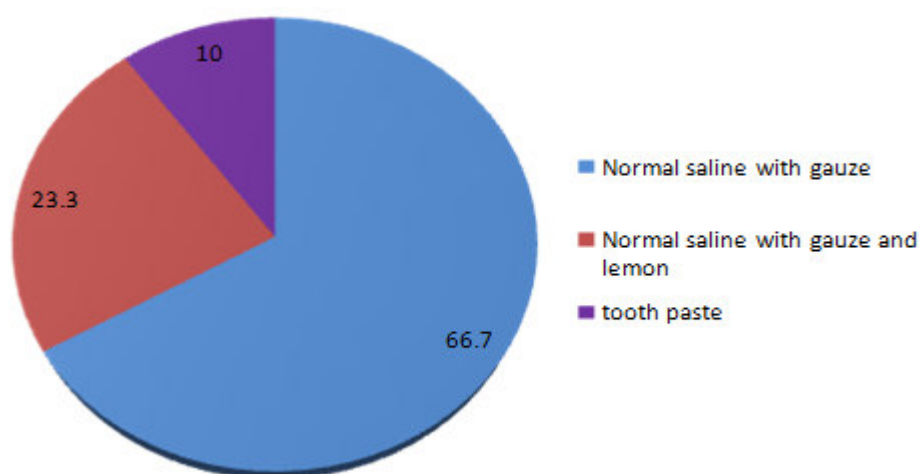


Figure 4: Percentage distribution of the type of oral care used

Observed oral care practice

The oral care practice observed was hand washing before 0 (0%) and hand washing after 1(10%) oral care to a patient. All of them (100%) wear clean gloves during oral care. 4 (40%) nurses position a patient in a semi recumbent position during oral care. Only one (10%) used tooth brush with

tooth paste, 6 (60%) rinse patient's mouth with normal saline and gauze. 9(90%) do suctioning of secretions as they accumulate during the oral care, 2 (20%) apply water soluble jelly and 8 (80%) clean equipment and return it in a proper place (Table 4).

Table 4: Results of observed oral care practice

Oral care	YES n (%)	NO n (%)
Hand washing before oral care	0(0%)	10(100%)
Apply clean gloves	10(100%)	0(0%)
Position a patient in a semi recumbent	4(40%)	6(60%)
Clean mouth using gauze moistened with mouth wash and water	6(60%)	4(40%)
Toothbrush with tooth paste	1(10%)	9(90%)
Rinse mouth with a clean swab	2(20%)	8(80%)
Suction secretions as they accumulate, if necessary	9(90%)	1(10%)
Apply water soluble jelly to patients lips	2(20%)	8(80%)
Clean equipment and return it to its proper place	8(80%)	2(20%)
Hand washing after oral care	1(10%)	9(90%)
Documentation	10(100%)	0(0%)

DISCUSSION

This study has described the current knowledge, attitude and practice of oral care intervention of nurses working in pediatric and adult ICUs. It has also examined whether a recently introduced evidence-based oral care protocol was being followed. Furthermore direct observation of nursing practice of oral care was also evaluated.

The result of this study shows that majority of ICU study participants were generally knowledgeable, about the fact that comprehensive oral care has a major role in prevention of dental plaque and nosocomial infections. When their knowledge level was compared with their educational background and work experience, there was no statistically significant association and this could be due to small number of participants in the study and unequal distribution in the number of participants in their educational background and work experience.

Attitude regarding oral care was also expressed in percentage. In this study it was found that, nearly all nurses perceived oral care as a high nursing priority. This is similar to a study done in South Africa where the participants perceived oral care as a high nursing priority [11]. Of the participants 72.4% found cleaning the mouth an unpleasant task and 53.4% found it a difficult task to perform. In contrast to this, in South Africa it was found that 40.6% felt cleaning the mouth an unpleasant task, and 47.9% found it a difficult task to perform [11]. Data from South Africa and USA surveys found that 86.5% [11] and 88% [12] nurses felt that they had received adequate training in providing oral care, respectively. Similarly in this current study 80% of the nurses felt that they had adequate training in providing oral care.

Nurses play an important role in providing oral care as they are at patient's bedside 24 hours. Majority of the participants 96.6% (n = 29) perceived that nurses are responsible for assessing oral status of ICU patients. In a similar study done at US ICUs [12] more than 91% responded that it's nurse's responsibility to assess and clean the oral cavity of ICU patients. This finding is very important because nurses perform oral care only if they perceive that, it is their responsibility.

Both the type and frequency of oral care provision varied among the participants in this study. The most commonly used mouth wash was normal saline with gauze as reported by 66.7% of study participants. In a comparable study done in Abudabi 32.6% preferred normal saline with gauze [13]. In contrast in this study 23.3% responded that they used both normal saline with gauze and lemon. However using lemon is not advisable as its acidic nature dries the oral tissue. This can be attributed to unawareness of the above mentioned fact. Although all the nurses (100%) responded that tooth paste was not provided by the hospital, three nurses (10%) used tooth paste with brush. These tooth paste with brush were provided by the family on the nurses' request. None of them used chlorhexidine mouthwash and this is because there was no supply of chlorhexidine in the unit. However, the lack of chlorhexidine may indicate deficiency of awareness about current best practice recommendations. Meanwhile a study conducted in South Africa disclosed that, nearly two-thirds of the nurses (63.0%, n=58) indicated that they used manual toothbrushes at least daily. Toothpaste was available to 60.9% (n=56) of

those using toothbrushes. And thirty nurses (32.6%) used CHD exclusively [11].

In this research there was also an interest in determining which oral care protocol or guideline the nurses in ICUs use. Although the presence of an oral care protocol/guideline does not guarantee compliance with the recommendations, it may influence their practice. A large number of participants stated that they do not have protocols/guidelines and 44.8% of participants used the WHO protocol/guideline. And the rest mentioned that they used the nursing procedure protocols. The presence of a protocol or guideline may influence practice, but ongoing targeted education is needed to increase awareness and knowledge of the ICU nurses.

There was also an interest in determining the effect of hospital-provided supplies on the provision of oral care. Lack of toothbrushes hindered nurses from providing oral care. All of them agreed that the hospital did not supply toothbrushes. Availability of supplies and equipment for patient care can greatly affect the quality of care given by the nurses. Availability of an oral care protocol with a child-size toothbrush is important so that it becomes part of the routine patient care in the unit. Child-size toothbrushes should be included in the existing oral care procedure since oral care and implementation of the ventilator care bundle interventions have been shown to decrease the rate of VAP [11]. Lack of oral care training was also addressed as a barrier. Many nurses indicated that the only training in oral care they received was during their basic training. This could be problematic, as oral care for ICU patients and especially for intubated patients requires a different knowledge and skill base to that required for a ward patient. The oral care practice was also observed to see if there is consistency between the knowledge and attitude of ICU healthcare providers with their practice. During the observational period in pediatric ICU, none of the nurses did oral care. Because oral care is not considered a routine care in pediatric ICU; it is done only when prescribed. In the adult ICU, as evidenced by the observation health care providers did not practice adequate oral care intervention and assessment during admission. Although 44.8% of the participants stated that they used WHO guidelines, surprisingly there was no available protocol or guideline in the ICUs found by the research team. The frequency which they have stated was also compromised as they barely clean the mouth of very critically ill patients once a day during the morning shift. According to AACN's oral care protocol, tooth brushing with toothpaste is recommended twice a day and swabbing the mouth every 2 to 4 hours. However in the current study observers found using a toothbrush was inadequate because it was not available. Even cleansing the mouth with normal saline and gauze was not satisfactory which can be attributed with the difficulties in manipulation of the endotracheal tube which limits access to the oral cavity and causes fear of potential dislodgement of the tube. Oral suctioning and rinsing is indicated to prevent aspiration of oral care solutions and secretions during oral care [1]. In the current study 9 (90%) of the nurses did suctioning of the oral cavity of patient in need after cleaning the mouth with gauze and normal saline. Suctioning the oral cavity was also done without cleaning the oral cavity just for removal of secretions in unconscious patients. 4 (40%) of the nurses did position their patient in semi recumbent before performing

oral care. Patients are positioned in a semi recumbent position to prevent back flow of oral secretion.

CONCLUSION

Oral care is a basic nursing intervention in the ICU. However it is often considered as intervention which is done for patients' comfort. As a result, nurses fail to consider it as first priority in their nursing care plan. Although most of the ICU nurses are knowledgeable about the importance of oral care, their practice varies among them. The results of this research indicate that oral care currently provided in ICUs may be ineffective in removing dental plaque and respiratory pathogens from the oropharynx of ICU patients. This is because they are using the least effective method which is normal saline with gauze. Large, multiple-site clinical trials, changes in hospitals current practice, national guidelines, and multidimensional interventions may be required to change oral care practice in ICUs. The existence of various oral care practices indicates that there is a need of a standardized oral care protocol or guidelines that includes tooth brushing and use of chlorhexidine mouthwash. This research has offered important insight into nurses' practice and their attitude toward oral care in ICU admitted patients. It also identified areas for future improvement in our hospital. This study revealed adequate ICU nurses' knowledge towards oral care, but their knowledge was not reflected in their practice. Hence the study participants have to be encouraged to practice adequate oral care. This may be guaranteed by providing them the necessary supplies, because lack of instruments was the main complaint addressed by the participants.

Recommendation

- The nursing department syllabus in Eritrea should integrate comprehensive oral care and should be improved to include more hours of oral care training.
- ICU nurses need to be encouraged to translate their knowledge into practice by solving the barriers which hinder their practice.
- ICU patient's individual requirements for oral care should be considered as part of admission assessment.
- The use of an assessment model such as the BRUSHED assessment model is recommended for the immediate identification of oral problems for every patient and should be carried out daily.
- Adoption of evidence based acceptable guidelines is recommended.

REFERENCES

1. Munro, C.L. and M.J. Grap, Oral health and care in the intensive care unit: state of the science. American Journal of critical care, 2004. 13(1): p. 25-34.
2. Kite, K. and Pearson L., A rationale for mouth care: the integration of theory with Practice. Intensive Critical Care Nurse, 1995.
3. O'Keefe-McCarthy S., Evidence-based nursing strategies to prevent ventilator- acquired pneumonia. Dynamics, 2006.
4. Stonecypher K., Ventilator-associated pneumonia: the importance of oral care in intubated adults. Critical Care Nurse, 2010.
5. Samuelson KAM., Adult intensive care patients' perception of endotracheal tube-related discomforts: a prospective evaluation. Heart Lung, 2011.
6. Landström M., et al., Perceptions of registered and enrolled nurses on thirst in mechanically ventilated adult patients in intensive care unit, 2009.
7. Treloar DM. and Stechmiller JK., Use of a clinical assessment tool for orally intubated patients. Am J Critical Care, 1995

- Additional oral care training should be given to ICU nurses because providing oral care for intubated patients requires additional knowledge and skill.
- More and extended studies to evaluate KAP of nurses should be done in Eritrea.

Declarations

Ethical approval and consent to participate

A support letter of authorization was collected from department of nursing research committee and permission was obtained from the medical directors of generalized pediatric and adult ICUs. Informed consent was obtained from each participants after a full and thorough explanation of the aim and potential outcomes of participating in the study and written consent was signed. As it is noted in each of the questionnaire, the ethical issue is highly valued. For this reason identity of the participants was kept confidential, but they received a unique study code and they had a full right to drop from filling the questionnaire.

Availability of data and materials

The complete data set supporting the conclusions of this article is available from the corresponding author and can be accessed upon a reasonable request.

Competing interests

The authors declare there is no conflict of interest.

Funding

There was no source of funding for the authors or manuscript preparation.

Authors' contribution

ZAD, YYT, YZT, TH, and YO conceived, designed, analyzed and supervised all aspects of its implementation. DTK was involved in paper drafting and overall supervision. YFB and IAA were involved in drafting of manuscript and critical revision of the manuscript for important intellectual content. All authors read and approved the final manuscript.

Acknowledgement

We would like to thank the department of nursing and generalized pediatric and adult ICUs wards for their support and opportunity to conduct the study. We thank the participating staffs and assistants who enabled data collection at all study sites.

8. Blot S., et al., Oral care of intubated patients, 2008.
9. Pear, S., C. Stoessel, and S. Shoemake, The role of oral care in the prevention of hospital-acquired pneumonia. *Infection Control Today*, 2007. 11(10): p. 1-3.
10. Mary Jo Grap, et al., Oral Care Interventions in Critical Care: Frequency and Documentation. *American journal critical care*, 2003.
11. Perrie, H. and J. Scribante, A survey of oral care practices in South African intensive care units. *Southern African Journal of Critical Care*, 2011. 27(2): p. 42-46.
12. Binkley, C., et al., Survey of oral care practices in US intensive care units, 2004.
13. Belal Hijji, Trained Nurses' Knowledge and Practice of Oral Care on Three wards in acute care hospital in Abudabi-UAE, 2003.

How to cite this article: Assessment of Nurse's level of knowledge, attitude and practice of oral care in Pediatric and Adult Intensive Care Units, Asmara, Eritrea, East Africa. Zewdi Amanuel Dagneu, Yohana Yebio Tewelde, Yobiel Zemhret Tesfamichael, Thomas Haile, Yohannes Oukbay, Desale Tewelde Kahsay, Yemane Fessehaye Berhe, Isayas Afewerki Abraham. *Int J of Allied Med Sci and Clin Res* 2020; 8(3): 702-710

Source of Support: Nil. **Conflict of Interest:** None declared.