

Intensive care nurses' opinions and practice for oral care of mechanically ventilated patients

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Abstract

Context: Oral care is an essential aspect of critical care nursing. However, no study has been published on oral care practice of Iranian and Asian nurses. The majority of published studies were conducted in western and European countries. **Aims:** This study aimed to evaluate the nurses' opinions and practice about oral care in patients under mechanical ventilation. **Settings and Design:** A cross-sectional study was conducted on 130 intensive care nurses from 6 intensive care units in the university hospitals of Iran. **Materials and Methods:** A questionnaire was used to gather the data and charts of 45 patients were evaluated. **Statistical analysis:** Descriptive statistical analysis are presented. **Results:** Oral care obtained the 7th rank in priority and a mean score of 5.7 on a scale of 1-10. More than 21% of subjects did not perform oral care in their usual duties. High load of writing tasks and personnel shortages were the major barriers to oral care. Only 20% of the patients' charts contained a report on oral care. **Conclusions:** Nurses did not consider oral care in intensive care patients as a high priority. This result highlights the need to continue education programs on oral care for improving the knowledge and attitude of intensive care nurses with respect to oral care.

Keywords: Critical care, mechanical ventilation, oral care, nurses' opinions

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Introduction

Oral care is an essential aspect of critical care nursing.^[1] Poor oral care can affect communication and nutritional intake and may cause pain and oral and respiratory infections in intensive care unit (ICU) patients.^[2]

Although nurses rank oral care a high priority, there is a theory-practice gap in relation to nurse administered oral hygiene,^[3-5] and oral care methods are not consistent with the current research.^[4,6,7] This gap has attributed to inadequate training or lack of written protocols.^[8-10] To the best of our knowledge, no study has been published on oral care practice of Iranian and Asian nurses. The majority of published studies have been conducted in western and European countries. This study aimed to

evaluate the opinions and practice of Iranian nurses about oral care in ICU patients under mechanical ventilation.

Materials and Methods

A descriptive cross-sectional study was conducted on 130 ICU nurses in selected university hospitals of Iran. Inclusion criteria included having at least 1 year of nursing experience, working in ICU for at least 6 months, and consent to participate. Using a simple random sampling method, 50% of the nurses in each unit were selected from a list of nurses working in each unit. A new randomly selected nurse from the same unit was recruited if a nurse did not consent to participate.

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Ethical considerations

The ethical aspects of the research were approved by the Institutional Review Board. All nurses signed the written informed consent and were assured of confidentiality.

Data collection

A two-part questionnaire was used to gather data (see appendix). The first part contained questions about demographics including gender, age, years of working in ICU, the highest qualification, and the nurses' history of training on oral care. The second part included 8 questions. The first 3 questions were about the frequency of oral assessment and oral care through the usual working shift and the nurses' beliefs about the goal of oral care. The 4th and 5th questions were in yes/no format and were about using a checklist for oral care and documentation of oral care immediately after the care was done. A list of ten essential nursing care (including tracheal suctioning, skin care, eye care, oral care, bowel care, writing reports, helping or doing personal hygiene for mechanically ventilated patients, care for catheters, nutrition, and preventing sensory overload) was asked in question 6, and the nurses were required to score themselves from 1 to 10, with a higher score indicating more importance for care. The question 7 was in visual analog format and consisted of several 100 mm columns representing 12 common materials used in oral care (including cotton swabs, pieces of cotton gauze, normal saline, tape water, mixture of lemon water and glycerin, oxygen peroxide, cholrohexidine, betadine, petroleum jelly, tooth brush, toothpaste, and simple oral suctioning). Descriptors were placed at each end of columns (100 = highest frequency of using; 1 = lowest frequency of using). Nurses were asked to mark an X on place that corresponded with the frequency of using each material in oral care. The question 8 was consisted of a list of 10 common barriers for practicing good oral care that were extracted from previous literature. Nurses were asked to score themselves from 1 to 10, with a higher score for items considered more important barrier to oral care. The questionnaires were given to the nurses and were gathered on their next shift.

Content validity of the questionnaire was confirmed by 10 nurse educators and 2 ICU tutors. Reliability of instruments was also checked by test-retest on ten nurses at a 2-week interval ($r = 0.79$).

Also, nursing records of 45 patients were evaluated for the numbers and the content of oral care reports. For this purpose, two rounds (on 2 consecutive days) were conducted in each unit, and the nursing records of patients who had at least 1-day long stay and were under mechanical ventilation were evaluated by the second author.

Please visit www.ijccm.org for appendix.

Results

A total of 99 female and 31 male nurses participated in this study, with a mean age of 31.5 ± 5.9 years and a mean experience in ICU of 6.5 ± 4.1 years. Of them, 110 nurses had a Bachelor of Science in nursing, 9 had Master of Science in nursing, and 11 had nursing diploma. About one-third of the participants had a history of post-basic training on oral care for ICU patients. On a scale of 1–10, nurses rated oral care with a score of 5.7 that was the seventh priority among the ten nursing care functions [Table 1]. Only about 21% of nurses marked the "prevention of ventilator-associated pneumonia" (VAP) as the aim of oral care. Also, 21.5% stated that they do not administer oral care for patients, and only 16.2% stated that they use a special written checklist for administering oral care [Table 1]. The common means employed for oral care were simple suctioning (83.8%) followed by normal saline swabs (69.2%) and cholrohexidine paint (53.8%); however, tooth brush was only used in 14.6% of cases for oral care [Table 2]. The most important barriers to oral care for patients under mechanical ventilation were "too much writing tasks" followed by "lack of time" and "staff shortage" [Figure 1]. More than 86% of nurses stated that they recorded all oral care practices; however, no

Table 1: Nurses' reports of oral care—its rank, goal and assessment

Variable	Mean (SD)	N (Percentage)
Priority of care		
Tracheal suctioning	7.8 (3.0)	-
Writing reports	7.2 (3.5)	-
Skin care	6.9 (2.6)	-
Care for catheters	6.6 (2.7)	-
Nutrition	6.1 (2.5)	-
Eye care	5.8 (2.4)	-
Oral care	5.7 (2.8)	-
Bowel care	5.6 (2.5)	-
Doing personal hygiene	5.1 (3.1)	-
Preventing sensory overload	4.9 (3.0)	-
The goal of oral care		
Providing the patients' comfort	-	102 (78.5)
Preventing pneumonia	-	28 (21.5)
History of training on oral care		
Yes		
At university	-	26 (20)
At hospital	-	17 (13.1)
No	-	87 (66.9)
Frequency of oral assessment		
0	-	28 (21.5)
1-2 times	-	82 (63.1)
≥3 times	-	20 (15.4)
Frequency of oral care		
0	-	28 (21.5)
1-2 times	-	95 (73.1)
≥3 times	-	7 (5.4)
Using a checklist for oral care		
Yes	-	21 (16.2)
No	-	109 (83.8)

Table 2: Nurses' reports of materials used in oral care

Material used in oral care	Percentage of use
Simple oral suctioning	83.8
Normal saline*	69.2
Chlorhexidine	53.8
Tap water*	40.0
Mixture of lemon water and glycerin*	20.8
Toothpaste	13.1
Tooth brush	14.6
Petroleum jelly	8.5
Oxygen peroxide*	5.4
Betadine*	5.4

*With pieces of cotton swabs or cotton gauze

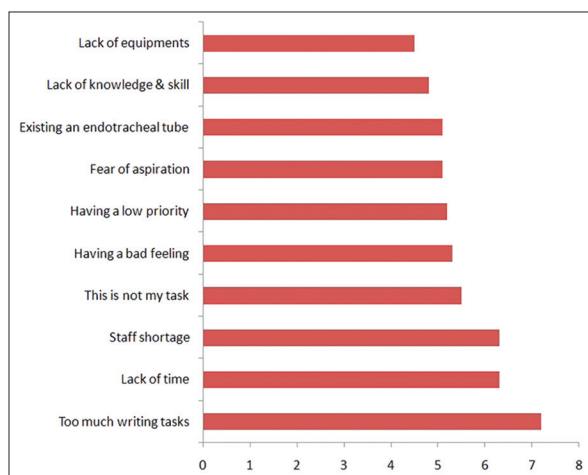


Figure 1: The nurses' ranking of barriers

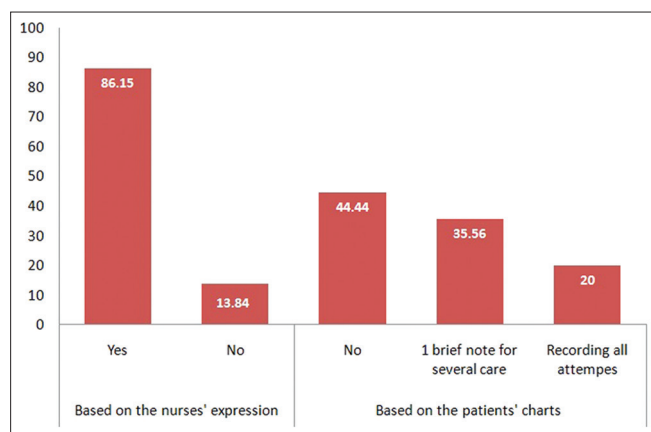


Figure 2: Frequency of recording oral care

documentation of oral care was found in the records of 44.4% of patients in the 2-day evaluation tour [Figure 2].

Discussion

This was the first study on oral care in ICU patients in Iran. Nurses participating in this study did not rank oral care in ICU patients as a high priority. They ranked

oral care as 7th among 10 nursing care functions, while endotracheal tube suctioning and writing of reports were ranked higher. This finding is consistent with previous reports from other countries. Grap *et al.*,^[11] and DeKeyser Ganz *et al.*,^[3] also reported that the majority of ICU nurses did not rank oral care as a high priority.^[3,11] However, our nurses ranked oral care lower than that in other studies. Because of the important role of good oral care in prevention of VAP,^[4,12] these findings suggest the need for educating nurses in this area.

The majority of nurses in this study believed that the provision of patient comfort and personal hygiene are the aims of practicing oral care in ICU patients. This finding consistent with previous reports suggests that nurses do not have up-to-date knowledge of oral care for ICU patients,^[3,11-15] do not have the knowledge-base for deciding the time, frequency and correct methods of oral care,^[11] and that the educational courses did not prepare them for practicing quality oral care for mechanically ventilated patients.^[13,15]

More than two-third of nurses in the present study stated that they did not pass any post-basic special training in oral care. This finding is alarming and is not consistent with studies done in Europe and United Kingdom (UK), where the majority of ICU nurses have passed post-basic training programs on oral care.^[1,16] It seems that lack of up-to-date knowledge on oral care has significantly affected the nurses' ranking of the oral care priority. It would appear from these data that nursing training programs with focus on oral care might change nursing knowledge and attitudes.

The majority of nurses in this study stated that they always recorded all oral care in their nursing notes; however, no report on oral care was found in 44.44% of the patients' charts. This finding is consistent with the results of Grap *et al.*,^[11] Sole *et al.*,^[10] and Hanneman and Gusick^[17] found discrepancies between what the ICU nurses stated and the content of nursing reports. However, studies have shown that performing and recording oral care are associated with reduced incidence of VAP.^[6,17,18]

Although the rate of recording oral care in this study was higher than that in other reports, most cases have been recorded briefly, and/or several times of oral care were recorded as one brief note. Also, it appears that 44% of patients did not receive oral care or the oral care was not recorded because it was not considered important. This finding shows the need to monitor nursing care and especially with respect to oral care to document accurately.

More than one-fifth of the nurses stated that they do not assess the patients' oral cavity or attempt oral care during their working shifts. Also, only about 16% of nurses reported that they use a written checklist for oral care. This finding is consistent with others and again demonstrates the nurses' poor knowledge and attitude towards oral care. Studies have shown that establishment of protocols along with educational programs could improve the nurses' knowledge and clinical practice of oral care.^[19,20] DeKeyser Ganz *et al.*,^[3] also cited the lack of a protocol to be the main reason for ignorance of oral care in ICUs. Other studies have also reported that no protocol is being used for oral care of orally intubated patients in more than half of the ICU wards in Europe and that oral care policies and practices vary from hospital to hospital and even within ICUs. In addition, protocols guiding oral care are inconsistent, impractical, or difficult to follow.^[10,21] These findings suggest the need for developing specific protocols for oral care.

Our nurses cited "too much writing tasks," "lack of time," and "personnel shortage" as the most important obstacles to oral care. According to Schwartz and Powell, nurses' fears of endotracheal tube dislodgement, aspiration and patient discomfort, along with the nurse's lack of time and knowledge, and the perception that oral care has a low priority are the main barriers to proper oral care in critically ill patients.^[22] It is also reported that factors such as inadequate education, unavailability of supplies and equipment,^[23,24] poor management,^[9] lack of a standard protocol, lack of sufficient time, shortage of nurses, overcrowding of units, excessive workload^[25,26] and poor knowledge and attitudes^[13,27,28] all affect the type and the quality of oral care.

Our study showed that simple oral suctioning was the most frequent method of oral care in mechanically ventilated patients. Toothbrush was used only in about 15% of cases despite the recommendation that it is the best method for removing dental plaques in ICU patients.^[29] Chlorhexidine was reported to be better than tooth brushing in reducing VAP;^[30] however, several investigations have shown that mechanical interventions, particularly tooth brushing, are more effective than using swabs or a oralwash with chlorhexidine.^[3,29,31,32] Tooth brushing was only prohibited in patients with coagulation disorders or severe oral ulcers.^[15]

Because of the possible effects of the researcher's presence on the practice of nurses, the nursing notes in the patients' charts were used to assess the nurses'

performance; however, a prospective observational study may more accurately reflect the nurses' practice on oral care in ICU patients.

Conclusions

The study indicated that most nurses ranked oral care as a low priority in intensive care patients. Too much writing duties, lack of time, and personnel shortages were mentioned as the most important barriers in practicing oral care. It seems that nurses do not have evidence-based knowledge of the importance and correct manner of oral care. Some in-service training programs along with strengthening the supervisory efforts is recommended.

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