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Research Article

Knowledge of Intensive Care Professionals About Oral Health Measures Applied in a Private Hospital ICU

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Received: February 16, 2016; **Published:** March 17, 2017

Abstract

Study aimed to evaluate the knowledge of the multidisciplinary team that works in the adult ICU of a private hospital, Brasilia-DF, in relation to measures of oral health promotion, clinical conditions and the main difficulties found on the development those activities. Applied a validated questionnaire and modified to 56 healthcare professionals in order to determine the level of knowledge about oral health, routine, adopted methodology, frequency and difficulties in carrying out oral hygiene practices. There was difference around the professional about the method and frequency of oral hygiene in the ICU. 66% of professionals were nursing technicians and there is no dentist as an intensivist team member. Measures of oral health promotion are performed by everyone, but the use of wooden spatula, gauze and toothbrush manual/electric as a technique of oral hygiene is the most used. 51 professionals have the knowledge about tongue coating and 22 professionals are unaware of dental biofilm. The frequency of tooth brushing performed by professionals is twice a day and 59% know about nosocomial pneumonia. About oral hygiene practices, 36 had specific training and 26 claimed the need for training. The oral cavity was considered difficult to clean by 30 professionals. There is a need to standardize and better training of hospital care professionals in implementing clinical measures for the promotion of oral health and its relation to systemic condition.

Keywords: *Intensive Care Units; Dental Service Hospital; Oral health*

Introduction

Hospitalized patients, particularly in intensive care units and patients with systemic diseases require specific care, making them more reliable on a multidisciplinary team capable or aiding in an ethical, humane, and clinical way, specially in their daily activities, for they are, in their majority, incapable of executing even the most simple procedures like their own oral hygiene. Therefore, the oral cares in these patients are indispensable.

The oral hygiene is required in the ICUs, contributing for the maintenance of a healthy stomatognathic system and analytically controllable. This clinical procedure, when not performed correctly by the intensive professionals, can contribute for the aggravation of the patient's healthy and contribute to a delay on his recovery. Besides, oral hygiene in patients in intensive care units is often precarious, there are also other factors that cause the worsen of oral healthy and the increase of bacterial biofilm, as the alteration of saliva's flux caused by medicaments, decrease of tongue's movement and cheeks while speaking and immune system compromised.

In Brazilian hospitals' clinical activities, the oral hygiene has no credibility by the majority of the professionals that work in this sector and it is not commonly known the close relation and matter of these procedures with the systemic diseases prevention, contributing for the improvement and/or the recovery of the hospitalized patient.

Dentistry practices in hospitals have the goal of preventing and/or eliminating possible infection sources; inflammation and painful symptoms due to oral problems and that can directly interfere with the systemic condition of critically ill patients and their non-recovery.

Most dentistry practices performed in hospitals are only known for activities focused on the treatment of curative-rehabilitative, but the educational and preventive actions have the same importance, specially when it comes to hospitals, where a relation is established between the interdisciplinarity and multiprofissionalism.

Facing this unknown need of promoting oral hygiene in the intensive care units, is important to emphasize that the dentist is most responsible for evaluating the entire context of the patient's oral health, specially for the accumulation of dental plaque, tongue coating, decay, halitosis, oral lesions, dentures, periodontal disease and residual fungal diseases in the oral cavity.

Gram-positive bacteria often constitute the oral cavity of healthy individuals. However, in hospitalized and intensive care patients for more than 48 hours, the oral flora tends to change, leading to a predominance of gram-negative bacteria such as *Staphylococcus aureus, Streptococcus pneumoniae, Acinetobacter baumanii, Haemophilus influenzae*, and *Pseudomonas aeruginosa* related to nosocomial pneumonia.

Studies show that when there is the presence of plaque on the tongue, there is an increase in these gram-negative bacteria. The buildup of plaque on the tooth surface, the presence of tongue coating and periodontal disease, tends to aggravate the clinical condition of the patient, as these present conditions serve as a niche gram negative bacteria, which results in a more virulent oral flora; So that the effective elimination of these factors associated with bacterial buildup in the mouth should be routinely performed by dentists and / or all other professionals involved in the environment of maintaining oral health of critically ill patients.

In ICUs, the most responsible for oral hygiene in critically ill patients are nursing technicians who are supervised by nurses and medical staff. However, the working activities demand, prioritized attention to the intensive patients, lack of knowledge and skills to act correctly in the oral cavity are some determinants of non-performance of routine oral hygiene in these patients.

This study aims to evaluate the knowledge, the measures used to promote oral health in critical environment and major difficulties in carrying out preventive measures and clinical oral health promotion of the multidisciplinary team that works in the ICU of a private hospital in Brasilia-DF in addition to reporting the importance of oral hygiene correlation with the systemic health of the patient.

Materials and Methods

A qualitative and descriptive study was conducted with the health professionals of the adults ICUs of the hospital Brasilia aiming evaluate the knowledge level about measures of promotion of oral health of these professionals and the mentioned hospital's oral healthy behavior.

An adapted survey with 12 questions of the study made by Soh and collaborators [1] was employed for 56 health professionals who work in ICUs by a single examiner.

This study was approved by the ethical research committee of the mentioned hospital (Hospital Brasília, DF), according to ethical principles of the Declaration of Helsinki (1964). All study participants signed an informed consent form.

Inclusion criteria were health professionals who work in the ICU 1 and 2, intended for adult patients of the Hospital of Brasilia, privately owned in Brasilia-DF and have direct contact with patients admitted in the hospital sector. Exclusion criteria were health professionals and hospital staff who do not work in these ICUs or in another hospital sector.

Survey participants had a time in their own work shift in the ICU, to answer the questions in the survey individually and tried to avoid dialogue among participating members for the absence of share of opinion, doubts and information among themselves.

All Analyses were performed in a descriptive and investigatory way about the current reality of knowledge and clinical procedures performed at this hospital itself.

Results

The results of the sample showed that, among 56 health professionals who responded to the questionnaire, 66.07% were nursing technicians, 14.28% were nurses, 10.71% were doctors, 7,14 physiotherapists and 1 78% audiologists (Figure 1A). There was no involvement of a dentist as member of the intensivist team because there are no dentists working in the ICU of the hospital.

Regarding the existence of the realization of measures to promote oral health in patients admitted to ICUs, all professionals stated that these procedures are performed for this purpose, despite the differences in their execution.

Regarding knowledge about tongue coating, 91.07% of professionals said they had knowledge, 5.36% answered unfamiliarity and 3.57% did not respond (Figure 1B). And when the question was related to biofilm, 39.28% of professionals said they had no knowledge, while 53.37% have knowledge, and 7.14% did not answer (Figure 1C).

The majority, 57.14% of the interviewees, answered that they make use of wooden spatula, gauze and toothbrush manual / electric as a technique of oral hygiene in the ICU. The use of toothbrush manual / electric amounted to 25% while 14.28% of the professionals make use of only wooden spatula and gauze. Only 1.78% of respondents make use of all oral hygiene practices with the use of forceps and cotton, forceps and gauze, wooden spatula and gauze and toothbrush manual / electric and 1.78% did not answer this question (Figure 1D).

Regarding the methodology used in performing oral hygiene in the ICU of the hospital, the majority did not answer, and only 25% of the sample gave credibility to this question. Other 23.21% responded that they use a toothbrush associated with chlorhexidine 0.12% and / or gauze with chlorhexidine 0.12%. A sample of 10.71% claimed to use both a toothbrush with toothpaste as gauze with toothpaste. 5.36% of the responses showed that these professionals have no preference as to the method of cleaning, sometimes making use of cotton with toothpaste, sometimes making use of a toothbrush with toothpaste and/or toothbrush with chlorhexidine 0.12% (Figure 1E).

According to 60.71% of the respondents, tooth brushing in critically ill patients is done 2 times a day, while 26.78% held 3 times a day. About 4 Professional (7.14%) responded to only one brushing once a day and 5.36% did not answer (Figure 1F).

Among the 56 respondents, 52 professionals (92.86%) stated that actions are made of oral hygiene in orotracheal-intubated patients in the ICU in this hospital and only 7.14% did not answer (Figure 1G).

Regarding specific training on oral hygiene practices in ICU patients, 64.28% (36 professionals) reported having received such training, 26.78% (15 professionals) reported the opposite and only 8.93% did not answered (Figure 1H). Important to note that 46.43% of the sample claimed that they need more training and equipment suitable for this type of activity, while 41.07% (23 subjects) said there was no such need and 12.5% did not answer (Figure 1I).

Regarding the difficulties in performing proper maintenance of oral health in patients admitted to ICUs, 53.37% (30 professionals) consider the oral cavity difficult to clean, while 33.93% have no difficulties and 12.5% did not answered (Figure 1J).

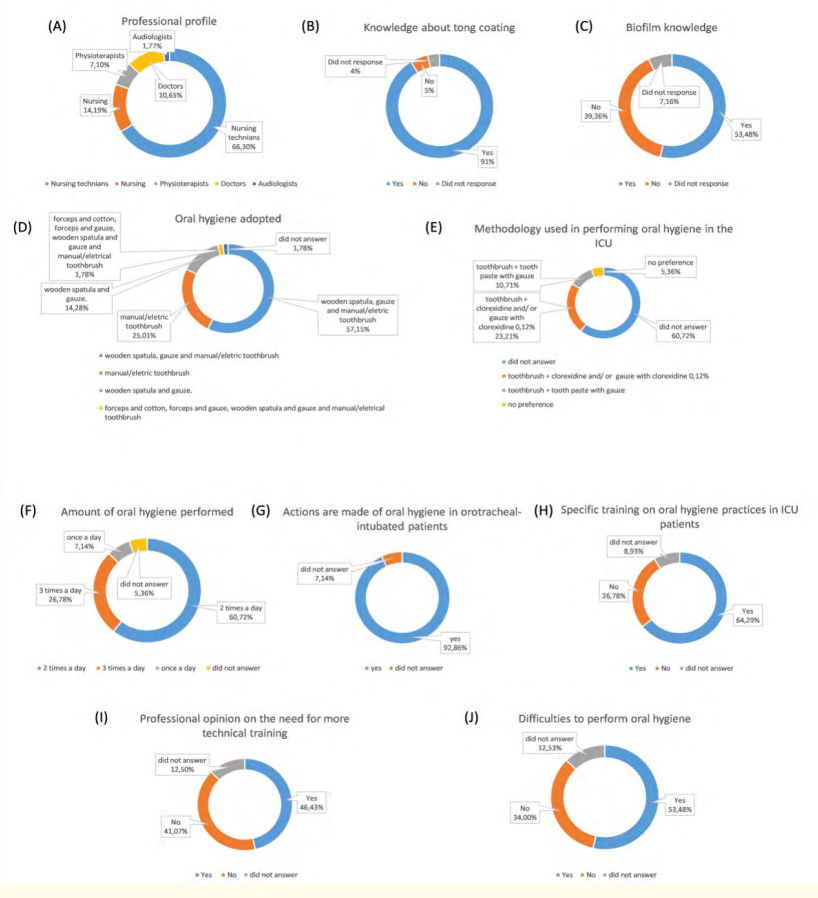

Figure 1: *Resume of the all results represented by percentage. (A) represent professional profile that responded the questionnaire; (B) represents knowledge about tong coating; (C) represents professional's knowledge about biofilm. (D) represents the behavior adopted during oral hygiene; (E) represents the methodology used in performing oral hygiene in the ICU. (F) represents the amount of oral hygiene performed by professionals; (G) represents the actions that are made of oral hygiene in orotracheal-entubated patients; (H) represents specific training on oral hygiene practices in ICU patients; (I) represents the professional's opinion on the need for more technical training and (J) represents the difficulties related by professionals to perform oral hygiene.*

Discussion

The oral hygiene represents an important professional activity in promoting health and quality of life of ICU patients. The total elimination and / or partial dental plaque and tongue coating should be performed daily by professional that should be instructed in the use of specific methods related to dental techniques, as an efficient tooth brushing from the use of toothbrushes associated with prophylactic paste and, according to the majority of respondents, a more correct condition regarding the use of wooden spatulas associated with gauze.

Pearson and collaborators [2] and Amaral and collaborators [3] emphasize that the professionals responsible for the conduct of oral hygiene of patients in ICUs need to have learned about the proper use and choice of materials available, and suggest the set of protocols of specific oral health to each clinical case, contributing to the technical standardization of the team in achieving positive clinical outcomes.

In conducting this research, respondents were not asked about the use of tongue cleaner in patients hospitalized in intensive care units, but some studies 10, 15 showed that clinical management may help in the removal of about 1.3 g of tongue coating that is, it favors the removal of food debris, desquamated cells, bacteria and fungi, and reduce halitosis.

According Cerri e Silva [4], when these bacteria on the tongue develop in a quantitative and qualitative manner, they promote the production of volatile sulfur compounds associated with other unpleasant compounds, influence on the host and, can lead to a delay wound healing and halitosis.

According to Munro and collaborators [5] and Santos and collaborators [6] patients admitted to ICUs may suffer a change in salivary flux which puts the patient at risk, for this condition can lead to a significant increase of organisms in the oropharynx. With the presence of lingual biofilm, plaque, and the decrease of quantity and quality of saliva, the overall picture of the patient tends to get worse, so it important to emphasize the consistent removal of dental plaque and tongue coating. Being the usage of tongue cleaners considered more confortable for the as compared to cleaning with the use of the toothbrush that most often causes the patient to gag.

The insertion of preventive oral health and of minimal intervention, as a proper oral hygiene, directed to critical patients in the hospital should be planned and executed periodically during the day, or have a standardized protocol, including as to the frequency of tooth brushing and / or oral hygiene of patients, is a major factor in the onset of the oral health.

According to Soh and collaborators [1], the ICUs patient's oral hygiene should be performed, at its minimum, twice a day (every 12 hours) with the purpose of achieving a satisfactory oral health, as the majority of the interviewed health professionals answered they do, even though with the absence of a unique protocol between them all.

The maintenance of oral health, part of the systemic health, has an important role in the prevention of certain diseases such as nosocomial pneumonia. The accumulation of plaque and tongue coating serve as reservoirs that promote microbial colonization of gram-negative bacteria related to pneumonia from the hospital, especially in intensive care units.

The etiological knowledge and evolution of this systemic breathing disease is crucial to all healthcare professionals involved in the context of oral environment stabilization procedures in the ICU, whether directly or indirectly. Munro and collaborators [7], orach and Margo [8] and Feider and collaborators [9] correlate the deficiency of maintaining oral health with the increasing prevalence of nosocomial pneumonia in ICU patients.

According to Soh and collaborators [1], most care professionals consider the hygiene of the oral cavity a difficult task to be performed, requiring most appropriate equipment and training, in accordance to the majority of respondents, about 53% of the sample.

In this study, it was found that 17 of 56 health professionals do not have the knowledge about nosocomial pneumonia. According to Amaral and collaboratirs [3] and Santos and collaborators [6], it is important that all health professionals have the knowledge, improve themselves and act clinically in the oral cavity to prevent diseases and harmful to the systemic condition and the recovery of the patient in the ICU [10-20].

Conclusion

The oral hygiene is a routine that occurs in patients admitted to ICUs and depends on the health professionals. There was a disagreement as to the method and frequency of oral hygiene in critically ill patients in the studied hospital, this fact can be explained by the diversity of materials and methodologies, with no standardization and clinical procedure regarding this issue.

There is a need for courses and training focused in dentists and health professionals involved in the intensive context in order to create a single protocol to be followed in the mentioned hospital.

We emphasize the need for further knowledge and training on measures to promote oral health and its direct relationship to the systemic health, especially respiratory diseases such as nosocomial pneumonia, in order to contribute to the maintenance of these critical patients' health and life quality.

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Volume 8 Issue 5 March 2017