

PERCEPTION OF THE IMPORTANCE OF IMPLEMENTING NEW DENTAL PRACTICES, CONDUCTS AND PROTOCOLS IN AN INTENSIVE CARE UNIT OF THE SANTA CASA DE CARIDADE DE DIAMANTINA - MINAS GERAIS

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ABSTRACT

Objective: To evaluate, through the perception of health professionals inserted in the multiprofessional team of the Intensive Care Center (ICU) of Santa Casa de Caridade (SCC) of Diamantina - MG, the importance of implementing conducts, new practices and protocols of oral hygiene, carried out by dental residents. **Methodology:** A semi-structured and self-administered questionnaire was used, which was applied to all health professionals who work in the multiprofessional team of the ICU. **Results:** The response rate was 75% (n = 66). Although 70% of the participants reported that the oral hygiene of patients admitted to the ICU was performed by the nursing technicians before the inclusion of the residents, there was a difference in the frequency of oral hygiene, as well as the materials used to perform it, when compared to the present day. Regarding the training of professionals, on how to proceed with hygiene and its importance, it was observed that it did not happen before, and that nowadays, it has been possible to cover 93.4% of the responsible team. More than 95% of the research subjects agreed that the presence of the dental surgeon as part of the ICU team contributed both to the construction of the diagnosis and clinical conduct (n = 60 – 95.2%), as well as brought innovation to the care of patients in the ICU (n = 62 – 95.4%). **Conclusion:** The presence of dental residents in the ICU team was of paramount importance for the implementation of clinical protocols aimed at both prevention and recovery of oral health and for the training of professionals.

Keywords: Hospital dental team. Oral hygiene. Hospital dentistry. Oral health. Hospital dental service. ICU.

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INTRODUCTION

The Intensive Care Units (ICUs) were created based on the need to care for patients, whose critical condition required continuous assistance and observation by doctors and nurses, and the need for improvement and concentration of material and human resources for the care of critical patients, but still considered recoverable.⁽²⁾

It is notorious that there is an important relationship between the state of oral health and that of general health, and the literature has already established a relationship between the presence of certain oral diseases and the appearance and/or worsening of systemic conditions.⁽³⁾ Among these, we can mention the association between oral infections and aspiration pneumonia⁽⁴⁾, between periodontal disease and the worsening of cardiovascular diseases and diabetes⁽⁵⁻⁸⁾, and periodontal disease as a focus for the dissemination of pathogenic microorganisms with systemic effects⁽⁹⁾, among others. In hospitalized patients, this relationship is even more important, as the individual is weakened by the disease that led to hospitalization, usually uses several medications, is eating a modified diet and is often unable to perform his own oral hygiene. All these factors contribute to the worsening of their oral health and negatively impact the general health of hospitalized individuals.⁽³⁾

Likewise, the general health conditions of patients can affect their oral health condition, and it is essential, therefore, that an assessment of the patient's oral health status is carried out at the time of admission, and that there is monitoring of their oral hygiene condition throughout the period in which they are in the hospital environment.⁽¹⁰⁾

According to Gonçalves et al.,⁽¹¹⁾ it is extremely important to establish oral hygiene measures for patients who are hospitalized and, for those who are able to perform their own hygiene, guidance should be given by the professionals who care for them, especially the nursing team, which should be trained and qualified by a dental surgeon to perform such a task. However, these patients, in most cases, do not have adequate oral hygiene, possibly due to the absence of a relationship between dentistry and nursing and the lack of knowledge of appropriate techniques by the intensive care teams, a reality that favors the colonization of the oropharynx.⁽¹²⁾

Similarly, Arantes et al.^{Vasconcelos et al.(13)} emphasized that it is essential to expand the knowledge of hospital nursing teams regarding the importance of oral cavity hygiene and the development of protocols containing guidelines by hospitals. This can help to reduce the mortality and morbidity of hospitalized patients, especially those in ICUs⁽³⁾ and also contribute to the reduction of hospitalization time and the use of medications⁽¹⁴⁾, consequently reducing hospital costs. However, Kahn et al.,⁽¹⁵⁾ in a study conducted in



hospitals in the state of Rio de Janeiro, demonstrated that, in general, there is no protocol for infection control and care of the oral cavity in hospitals. Therefore, it is necessary for them to incorporate into their clinical staff the dental surgeon, a professional qualified in the recognition of pathologies inherent to the oral cavity and capable of evaluating, diagnosing, treating and preventing diseases.⁽¹⁶⁾

In this sense, the Bills (PL): No. 2,776/2008, approved by the Federal Senate on April 10, 2013, and PL 363/2011 established the mandatory presence of dental professionals in public and private hospitals where there are patients hospitalized in ICUs or wards. This measure aims to improve the care provided to patients, defend and support the provision of comprehensive health care, one of the principles of the Unified Health System (SUS), expressed in the Federal Constitution.⁽¹⁷⁾

Thus, the Graduate Program: Multiprofessional Residency in Health of the Elderly, through the participation of dental residents, as of June 2017, introduced the provision of dental services in the Intensive Care Center (ICU) of Santa Casa de Caridade (SCC) in Diamantina-MG, actively participating in the hospital routine.

Thus, the present study aims to evaluate, through the perception of health professionals inserted in the multiprofessional team of the ICU of SCC Diamantina, the importance of the implementation of conducts, new practices and protocols of oral hygiene, carried out by the dental residents of the aforementioned Graduate Program.

METHODS

This is a cross-sectional study with discourse analysis. This study was previously approved by the Research Ethics Committee of the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), under protocol number 3.118.359.

The same was performed at the ICU of SCC in Diamantina - MG. This institution is characterized by being a private, philanthropic hospital, serving the SUS, which has a partnership with UFVJM, evidencing a privileged field for the training, expansion and qualification of teaching, research and extension activities, which included the insertion of dentistry in the ICU through the Graduate Program: Multiprofessional Residency in Elderly Health as of June 2017.

For this study, a semi-structured and self-administered questionnaire (APPENDIX) was used, comprising questions that follow the Likert scale of five levels of demarcation of importance and agreement, multiple choice questions and also an open field for the presentation of opinions. The questions addressed the significant aspects related to the theme, focusing on the perception of health professionals in relation to the importance of



implementing conducts, new practices and protocols of oral hygiene provided to patients hospitalized in the ICU of SCC in Diamantina - MG.

The universe of professionals who make up the multiprofessional team of the ICU of the hospital was considered for the research, such as physicians, resident physicians; Nurses; nursing technicians, physiotherapists; and also the ICU interconsultants such as nutritionists; Speech therapist; psychologist and pharmacist. The exclusion criterion was considered to be less than one month in the sector scale, as well as those who are not part of the effective staff of said service.

Initially, the professionals who met the inclusion criteria received verbalized information from the researchers about the objective of the research they intended to carry out. Then, they were given a brown envelope containing the Informed Consent Form (ICF) and the semi-structured questionnaire. If accepted, the questionnaire could be answered at a place and time that the participant deemed appropriate and should be returned together with the signed ICF to the researchers on their next day of duty.

The collected data were analyzed using SPSS (Statistical Package for Social Sciences, IBM Inc., USA) version 25. Descriptive statistical analyses were performed to obtain mean and standard deviation, relative and absolute frequencies. A significance level of 95% ($p < 0.05$) was adopted.

RESULTS

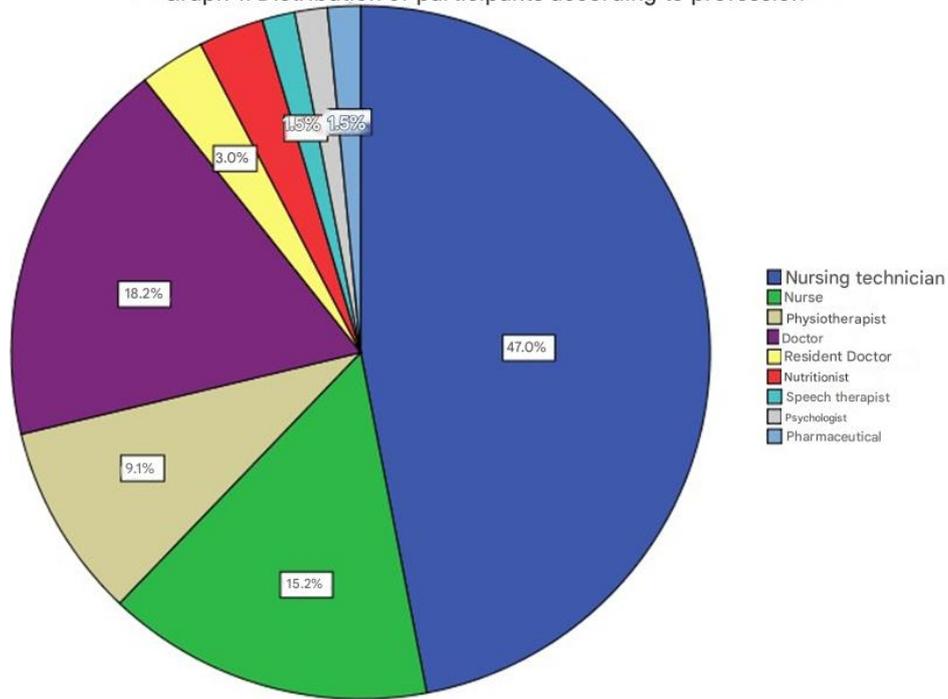
All 88 professionals who are part of the multiprofessional team of the ICU were considered eligible to participate in the research according to the inclusion criteria. Of these, 66 returned the completed questionnaire, which corresponded to a response rate of 75%.

The age of the participants ranged from 23 to 56 years, with the mean age corresponding to 32.8 years. Fifty-three participants (80.3%) were female, while 13 (19.7%) were male.

The information regarding the professional area of the participants can be seen in graph 1. It is noted that most of the participants are nursing technicians (47%), followed by physicians (18.2%), while psychologists, pharmacists and speech therapists corresponded to only 1.5% each.

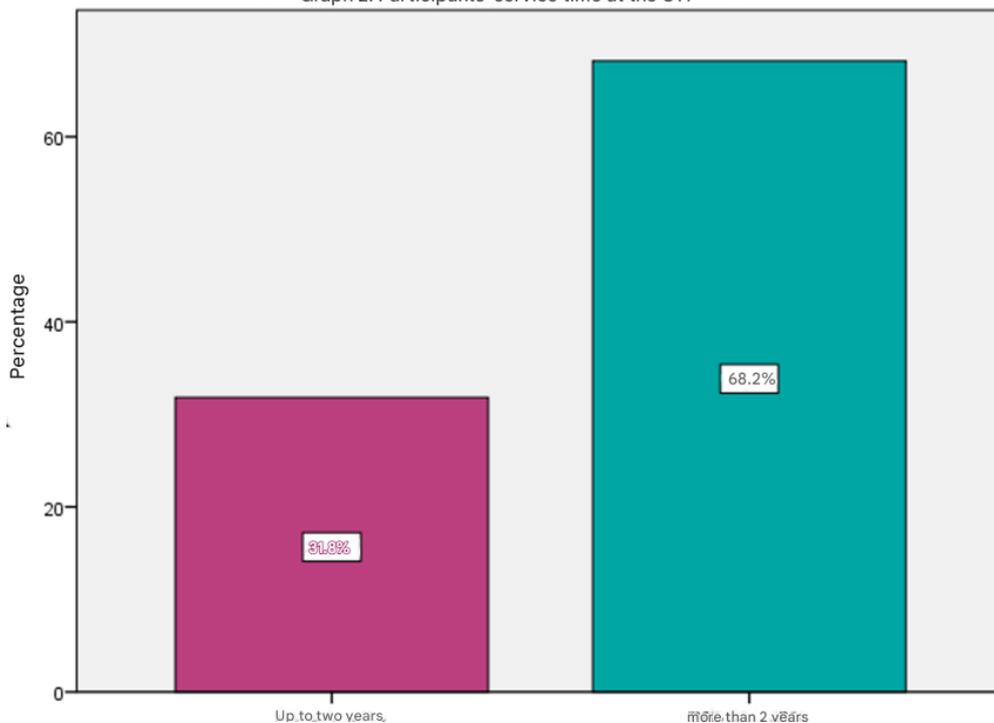


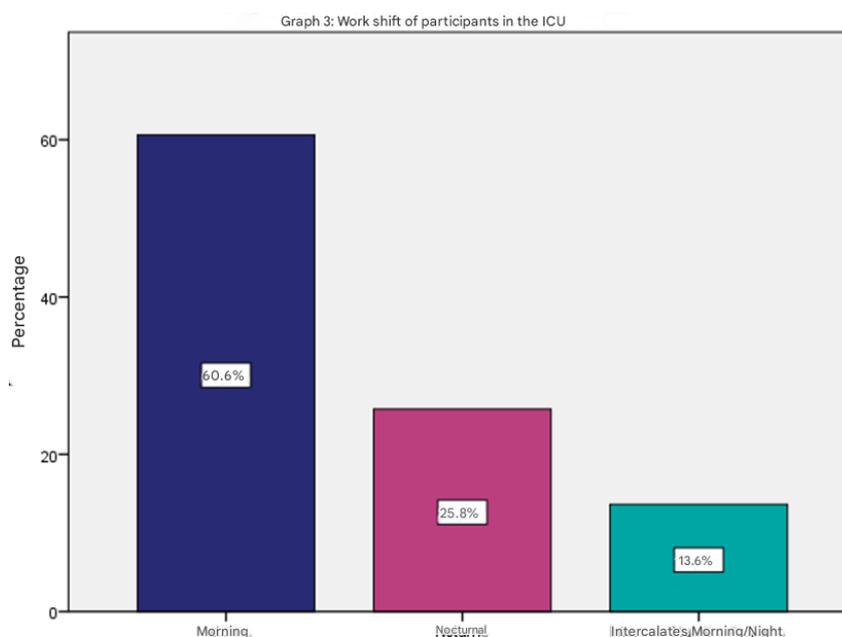
Graph 1: Distribution of participants according to profession



The participants' length of service and work shift can be seen in graphs 2 and 3, respectively. It is noted that most participants (68.2%) have been working in the sector for more than two years. Likewise, it is observed that the majority of the participants (60.6%) work in the morning shift, while the minority (13.6%) in the alternate shift (morning/night).

Graph 2: Participants' service time at the CTI





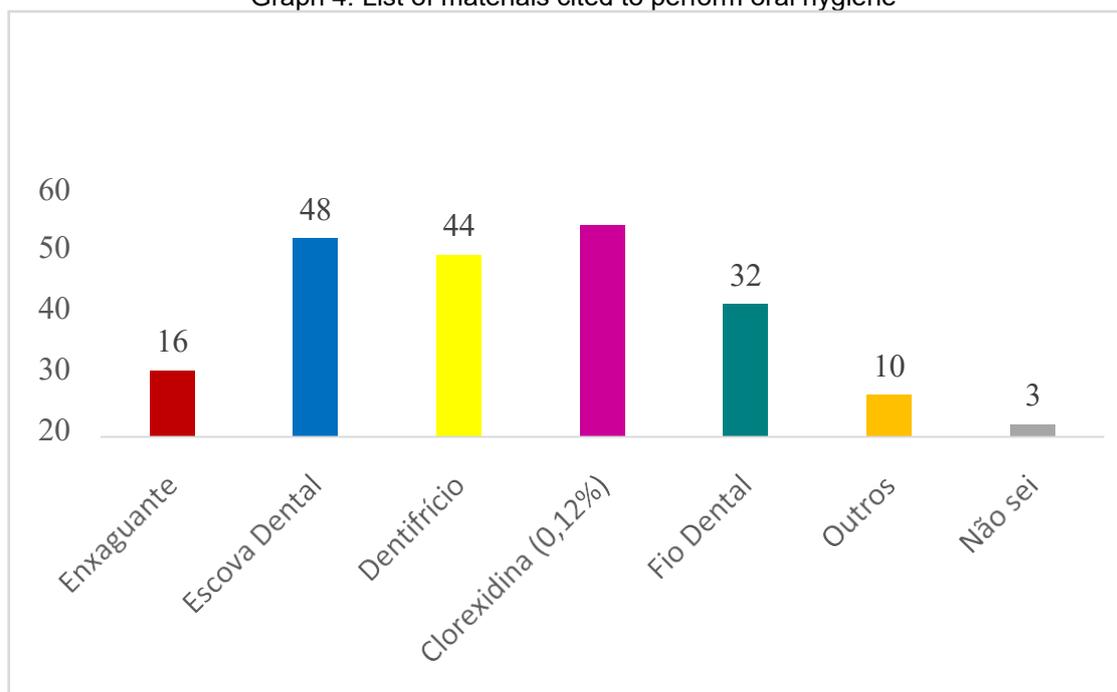
When asked if the oral hygiene of patients was performed before the insertion of the resident dental surgeon, 49 (74.2%) of the participants answered yes, while 1 (1.6%) answered no and 16 (24.2%) did not know how to inform.

Fifty-two (78.8%) of the participants reported that the nursing technician was the professional responsible for performing the oral hygiene of patients before the insertion of the resident dental surgeon in the team, 14 (21.2%) were unable to inform.

Regarding the frequency of oral hygiene of patients and materials used, there was a variability in the responses. As recorded in the medical prescriptions observed during clinical practice and reported by the professionals, before the insertion of dental residents in the ICU, it was recommended that the patients' oral hygiene be performed three times a day with 0.12% chlorhexidine. However, considering the current period, 14 (21.2%) participants answered that the frequency of hygiene is performed once a day, 26 (39.4%) twice a day, 3 (4.5%) more than twice a day, and 23 (34.9%) did not know how to inform.

The types of materials used to perform the current oral hygiene, as mentioned by the participants, can be seen in graph 4. The insertion of several other materials is observed, when compared with the period before the integration of dental residents in the ICU, when only 0.12% chlorhexidine was used.

Graph 4: List of materials cited to perform oral hygiene



According to information collected during the insertion of dentistry in the ICU, through clinical practices and experiences, there was no training for the nursing team on how to perform the correct oral hygiene of the patient by a dental surgeon. Currently questioned about this question, 29 (43.9%) participants reported having received previous instructions on correct oral hygiene, while 27 (40.9%) reported that they had not. However, if we consider that the training was carried out only for the professionals of the nursing team, it is concluded that it was able to cover more than 90% of the referenced team.

Most participants (n=34 – 56.7%) disagreed about oral hygiene being an unpleasant task to perform in ICU patients. However, 88.4% (n=53) agreed that there were difficulties in performing it.

Positively, more than 95% of the research subjects agreed that the presence of the dental surgeon as part of the ICU team contributes both to the construction of the diagnosis and clinical conduct (n=60 – 95.2%), as well as brought innovation to the care of patients in the ICU (n=62 – 95.4%).

DISCUSSION

In the midst of the process of inserting the resident dental surgeon in the ICU team of the SSC of Diamantina - MG, dentistry implemented the oral hygiene protocol based on evidence in the literature, considering the clinical findings and therapeutic artifacts used in the patient. Continuing education of the nursing team regarding the new protocol and its importance and oral hygiene for hospitalized patients was also carried out through



training. This implantation took place in June of 2017, and intra- and extra-oral clinical evaluation, individual hygiene according to the protocol, in addition to dental procedures, when necessary, was carried out daily, which, according to Rodrigues et al.,⁽³⁾ can thus enable comprehensive treatment, without separating the mouth from the rest of the body, since oral diseases are important sources of aggravation of systemic diseases.

According to Blum et al.,⁽¹⁸⁾ questionnaires are an important way to evaluate habits and procedures, and to quantify the needs and expectations of the ICU team. Likewise, we believe that the questionnaire created for this research, even though it is not a validated instrument, allowed us to achieve our objectives.

Although we initially considered working with all the professionals who are part of the multiprofessional team of the ICU of the SCC in Diamantina - MG, the response rate was relatively high, reaching 75%.

In the present study, nursing technicians represented the majority (n=31 – 47%) of the research subjects, a result similar to that of other studies carried out in ICUs.^(18,19)

Most participants (n=49 – 74.2%) reported that oral hygiene was performed before the insertion of the dental surgeon in the ICU team. Possibly, the 25.8% corresponding to those who reported not existing/were unable to inform (n = 17), refers to professionals who have been in service for less than two years (n = 10), that is, who were hired within the period of insertion of residents in the ICU and to professionals who are not part of the nursing team and may not have knowledge about oral health issues.

Regarding the responsibility of oral hygiene of patients, 21.2% of the participants were unable to report that nursing technicians were responsible. It is suggested that it is due to the fact that the patient's oral hygiene is the responsibility of the nursing team, and is not known to the entire team. Therefore, there is a need for greater integration among the professionals who make up the ICU team.

Regarding the frequency and materials used to perform oral hygiene, variability was observed in the answers, which can be easily understood considering that:

- 1) Not all professionals participating in the research have knowledge about the oral hygiene protocol implemented by dental residents, since hygiene is the responsibility of the nursing team;
- 2) This protocol differentiates the frequency of cleaning considering the therapeutic artifacts used in patients and their clinical conditions, and the frequency can be prescribed two or more times a day;
- 3) Among the answer options of the questionnaire, there was no option that the frequency would be a function of the patient's clinical condition;



4) Participants may have been confused and referred to the prescription that was performed before the implementation of the protocol (three times a day with 0.12% chlorhexidine for all patients);

5) The nursing team's reports:

"When there was an overload of the service, the oral hygiene of patients was carried out only once a day or not at all."

"Oral hygiene in the ICU before the multiprofessional residency was performed inadequately, only with the use of chlorhexidine (0.12%). No toothbrush was used and there was no evaluation of the oral cavity."

It is notorious that before the insertion of dental residents in the ICU of SCC in Diamantina - MG, there was indiscriminate use of mouthwash (0.12% chlorhexidine). Among the protocols for cleaning the oral cavity described in the literature, chemical and mechanical removal of biofilm is recommended, both in dentate and edentulous individuals and also in prostheses, since the mechanical method associated with the chemical method is more effective when compared to chemical-only methods (bactericidal and/or bacteriostatic solutions).^(20,21) Therefore, brushing is essential for these patients, since it contributes to a significant reduction in the duration of mechanical ventilation, helps to reduce the incidence of ventilator-associated pneumonia, and the duration of ICU stay.⁽²²⁾

According to the nursing team's reports, prior to the insertion of dental residents, there was no training on how to perform the correct oral hygiene of the patient and its importance. However, considering the present day, 43.9% of the participants reported having received training. This result is justified by the fact that they started to be performed by dental residents, but only for the nursing team, which corresponded exactly to the 43.9% who reported having received such training. Therefore, it can be considered that it has managed to cover more than 90% of the related team.

The perception of the importance of training and continuing education can be observed through the following reports of nursing technicians:

"I think that the dental residency at the ICU was very important, because in addition to showing the importance of oral hygiene for patients, it taught us to perform the correct procedures, in addition to guiding us in daily hygiene."

"Here the oral health team is to be congratulated, we were very well guided. This is not just for patients in the ICU. But also for self-care, with children, family, and people who need it. Correct oral hygiene is capable, along with other procedures, of reducing several morbidities. Such as aspiration pneumonia, and others. And at the same time maintain complete hygiene. It brought innovation to care."



Binkley et al.²³ Vasconcelos et al.⁽²³⁾ evaluated the oral health care provided in the ICUs of the Louisville Hospital in the United States through a survey method, in order to evaluate what was used to determine the type and frequency of oral care for critically ill patients and the attitudes, beliefs, and knowledge of health workers. The authors identified that oral care methods were not uniform and suggested the use of evidence-based protocols to improve the quality of care and provide more coherent oral health care. Its results also showed that oral care was reported by 91% of the nurses as a priority for patients with mechanical ventilation. However, 63% reported difficulties in performing oral cavity cleaning, 43% stated that it was unpleasant and 79.8% answered that they would like to learn more about oral care for critically ill patients.

In the present study, we found similar results, where approximately 44% of the research subjects agreed that performing oral hygiene in ICU patients is an unpleasant task, and the majority (88.4%) agreed that there are difficulties in performing such hygiene.

The discomfort about performing oral hygiene can be perceived in the report of one of the physiotherapists:

"Oral hygiene is unpleasant for me, for the dentist I don't think so, because he has the techniques and knowledge for the correct cleaning of the oral cavity and to avoid injuries."

It is important to emphasize that the method of implementation of the protocols also plays a role in practice; it is recommended that the active participation of the nursing team results in better adherence to the protocol.⁽²⁴⁾ Without training, adequate access to materials, and motivation, the quality of oral health care in the ICU is compromised.⁽²³⁻²⁵⁾ Thus, once again, there is positivity regarding the presence of a dental professional, helping to maintain adherence to oral health protocols, in addition to supporting and assisting the team to face any difficulties during patient care, as well as providing adequate training to the team. ⁽¹⁸⁾

In a pleasant way, it was observed in the present study a positive perception of the professionals of the ICU of the SSC of Diamantina - MG, regarding the agreement (approximately 95.0%), that the inclusion of resident dental surgeons in the team brought innovation to the care of hospitalized patients, as well as contributed to the construction of diagnosis and clinical conducts. This recognition can be observed in the following reports:

"The performance of the dental surgeon becomes indispensable for interdisciplinary / holistic treatment, in view of the search for the patient's improvement and survival." (Doctor)



"Dentistry is fundamental in the ICU and has contributed to comprehensive patient care." (Nurse)

"I congratulate the residents for the competent and responsible work carried out. I observed a significant reduction in halitosis in the patients I attended, in addition to the improvement of taste and food intake." (Nutritionist)

"I was able to observe how important the role of dentistry is in intensive care patients. Oral hygiene care began to be carried out adequately, minimizing the colonization of pathogens and also preventing pneumonia associated with mechanical ventilation. I have nothing but praise for the team of the Multiprofessional Residency." (Nurse)

As in a study conducted by Souza et al.⁽¹⁶⁾, the present study shows that professionals recognize the need for the presence of the dentist in the multidisciplinary team as a complement to comprehensive patient health care.

CONCLUSIONS

The presence of dental residents as part of the multiprofessional team of the ICU of the SCC of Diamantina – MG was of paramount importance for the implementation of clinical protocols of conduct aimed at both prevention and recovery of oral health; to carry out the intra and extraoral clinical evaluation of the patient, collaborating with the construction of the diagnosis and clinical conducts; to promote training and continuing education on the importance and correct way to perform oral hygiene of hospitalized patients to members of the nursing team and to perform dental procedures, when necessary.

The results of this research can also support internal actions and policies for the future insertion of the dental surgeon as an effective member of the multiprofessional team of the ICU of the SCC of Diamantina – MG.



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ATTACHMENTS

APPENDIX - QUESTIONNAIRE APPLIED



MINISTRY OF EDUCATION
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Multiprofessional Residency in Elderly Health



QUESTIONNAIRE

1. Sex:

Female Male

2. Age: Years

3. Profession:

- Nursing technician
- Doctor
- The council
- Nurse
- Resident Physician
- Psychologist
- Physiotherapist
- Nutritionist
- Pharmaceutical

4. Length of service in the Intensive Care Center (ICU):

- Less than 01 year
- More than 01 year and less than 02 years
- More than 02 years

5. Period working at the ICU:

- Morning shift
- Round shift
- Morning/noturn intercalation



6. The Multiprofessional Residency in Health for the Elderly, through Dental Surgeons, brought an innovation to the care of hospitalized patients.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree

7. Is oral care important for the general health of patients admitted to an ICU?

- Very important
- Important
- Reasonably important
- Not very important
- Unimportant

8. Correct oral hygiene is capable, along with other health procedures, of reducing several morbidities such as Mechanical Respirator Aspiration Pneumonia.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree

9. The evaluation of the dental surgeon within an ICU can contribute to the construction of diagnosis and clinical conducts.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree



10. Is the dental surgeon an important professional in the multiprofessional team of the ICU?

- Very important
- Important
- Reasonably important
- Not very important
- Unimportant

11. Oral health problems are common in Intensive Care.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree

12. The performance of Dentistry within the ICU influences the improvement of the patient's clinical condition, making it possible to reduce their hospitalization time.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree

13. The work of the dental surgeon collaborated for the identification and treatment of oral problems in patients.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree



14. Before the insertion of resident dentists in the ICU, was the oral hygiene of patients performed?

- Yes
- No
- I don't know how to inform

If so, follow the questions:

15. Who was the professional responsible for performing the oral hygiene of patients?

- Nurse
- Nursing Technician
- Other professional:
- I don't know how to inform

16. How often is patient oral hygiene?

- Once a day
- Twice a day
- More than twice a day
- I don't know how to inform

17. At some point did you receive prior instructions from a health professional on correct oral hygiene?

- Yes
- No
- I don't know how to inform



18. What materials and instruments are used as an oral hygiene protocol? (Check as many alternatives as you want).

- Oral endurance
- Escova dental
- Toothpaste
- Oral antiseptic (chlorexidine 0.12%)
- Fio dental
- Others:
- I don't know how to inform

19. Oral hygiene is an unpleasant task to perform in ICU patients.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree

20. There are difficulties in performing oral hygiene in patients in the ICU.

- I totally disagree
- I disagree partially
- I neither agree nor disagree
- I partially agree
- I totally agree



Leave your opinion, comment, suggestions and/or complaints here!

Thank you for your participation!