

Original Article

Knowledge, Attitude and Practice of the Nursing Team Regarding Oral Health Care in Intensive Care Units in a Reference Hospital of Recife, Brazil

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Abstract

Objective: To assess knowledge, attitude and practice of nurses regarding oral health care in intensive care units. **Material and Methods:** Developed in a Reference Hospital of Recife, Brazil carried out from July to September 2013. Overall, 282 professionals participated through a questionnaire to evaluate KAP on oral health care. Data were analyzed using Stata 12.0. For comparison, the Student t test and ANOVA with 0.05 significance level were used. **Results:** 45 (16 %) were professional nurses and 237 (84 %) belonged to the nursing team. 71.1 % of nurses and 72 % of nursing technicians failed to adequately respond as to know the daily frequency of oral hygiene performance, 75.6% of the surveyed nurses were aware of the use of chlorhexidine; however, only 37.7% of technicians considered this substance appropriate. Regarding attitude among nursing technicians, from the 11 questions, only two reached more than 90% of requirements. Regarding practice, when it came to items of medical record entries about the care provided, the percentage of inadequacy was 35.6 % among nurses and 26.2 % among nursing technicians, and the oral cavity conditions of patients, the frequency was 35.6 % and 26.2 % respectively. The average practice among nursing technicians was higher among those who had technical expertise in oral care ($p = 0.031$). **Conclusion:** For nursing technicians in practice section, oral health activity can be compromised by those without technical expertise.

Keywords: Nursing Team, Intensive Care, Oral Health.

Introduction

The essence of multidisciplinary in intensive care is not restricted only to environments or special equipment, but also to the decision-making process based on comprehensive understanding of the physiological and psychological conditions of the patient as well as of new therapies [1].

Interdisciplinary and multidisciplinary teams, consisting of doctors, nurses, physiotherapists, nutritionists, psychologists, social workers and dentists, recently integrated in some teams, are part of the intensive care routine. Within multidisciplinary, the daily care of hygiene and comfort in the hospital environment, including oral hygiene, is performed by the nursing team [2].

Due to the type and consistency of food consumed during hospitalization and reduced saliva production, if oral hygiene is neglected, biofilm (plaque) and oropharynx become a reservoir suitable for the growth of microorganisms, which may be aggravated by the presence other oral diseases such as periodontal disease, dental caries, pulp necrosis, mucosal injury and trauma caused by dentures, installing remote infections, influencing the therapeutic characteristics of each patient, eventually extending the hospital stay [3-5].

Associations relating periodontal disease and cardiovascular alterations with aspiration pneumonia have already been described in literature [6]. However, despite the knowledge about the importance of oral health and plaque control, studies and systematic reviews have shown that this practice is still scarce in ICUs. [6-11].

Although most professionals responsible for this practice recognize their responsibility regarding oral hygiene care, it is known that knowledge about oral health is often acquired empirically, since nursing professionals were not prepared in their academic training for activities related to oral health care (12-18)

In addition, when the oral hygiene technique is practiced, the lack of some procedures is observed, as well as its daily frequency, compromising its quality. The use of substances that do not provide the desired antiseptic actions to reduce the local microbial flora is also an aggravating factor [18].

The knowledge of adequate oral health practices in ICU patients is important to prevent the development of infections, performing at least the cleaning the teeth, gums, cheek and tongue with appropriate material [14].

Thus, this study aimed to assess knowledge, attitude and practice of nursing professionals regarding oral health care in intensive care units in a reference hospital of Recife, Pernambuco, Brazil.

Material and Methods

Knowledge, Attitude and Practice (KAP) study was conducted at the Reference Hospital *Prof. Fernando Figueira* Institute of Integral Medicine (IMIP), located in Recife, Pernambuco, Brazil from July to September 2013. Overall, 282 nursing professionals participated through a questionnaire containing demographic data, professional training and tool for KAP evaluation on

oral health care. The following definitions for knowledge, attitude and practice were adopted: *knowledge* (ability to acquire and retain information to be used, a mixture of understanding, experience, judgment and skill), *attitude* (inclination to react in a certain way to certain situations, see and interpret events according to certain predispositions, organize opinions within an interrelated and coherent structure) and *practice* (implementation of rules and knowledge that lead to the execution of the action in an ethical way).

The construction of the instrument was carried out in three stages [15]. First stage: construction of the initial form based on literature [1,3,6,9-10,12,14,16-7]. Second stage: evaluation of the appearance and content performed by nurses with theoretical and practical expertise in the Intensive Care area from three higher education institutions of Recife. The responses to questions scored from 0 to 3 (0 = Not necessary 1 = Regular, 2 = Good, 3 = Great) for content, remaining those who have obtained minimum score of 2. Third stage: evaluation of the objectivity and clarity of questions by 20 nursing professionals who work in intensive care units, where responses to questions scored from 0 to 3 (0 = Not necessary 1 = Regular, 2 = Good, 3 = Great) for both objectivity and for clarity, remaining those who obtained scores of at least 2 in all evaluations (objectivity and clarity). The questionnaire consisted of questions about characteristics of nursing professionals (age, gender, and education), knowledge, attitude, and practice in oral health care. For questions about knowledge, dichotomous type responses "yes" and "no" were adopted. Regarding attitude, the five-level Likert scale [18] was used ("agree," "strongly agree," "disagree," "strongly disagree" and "I have no opinion"). Regarding practice, the answers were dichotomous type ("yes" / "no"). The forms were distributed to professionals with proper guidance about filling at the place of work.

For data analysis, the following variables were considered dependent: knowledge, *adequate question* when the answer was "yes" for true assertions, or "no" for false assertions; *inadequate question* when the response was "no" for true assertions, or "yes" for false assertions; attitude, *adequate question* when the response was "agree" or "strongly agree" for true assertions, or "disagree" or "strongly disagree" for false assertions; *inadequate question* when the response was "disagree", "strongly disagree" "I have no opinion" for true assertions, or "agree," "strongly agree," "I have no opinion" for false assertions and practice, *adequate question* when the response was "yes" and *inadequate question* when the response was "no." Responses were considered adequate or not adequate according to literature. For each questionnaire, a score was calculated on a scale from 0 to 10, being considered the maximum score of 10 when all questions showed correct answers. Independent variables were age group and professional training characteristics.

A database was created to double entry in Excel 2003 software and validated in Epi Info 3.4.3. Data analysis was performed using the Stata 12.0 software. For categorical variables, absolute and relative frequencies were calculated. For variable score, means and standard deviations were obtained. Comparisons of the average scores of knowledge, attitude and practice about oral health care, according to age and professional training characteristics were performed using the Student t test and ANOVA test considering that these procedures are robust in situations where variable

response does not necessarily follow a Gaussian distribution, or does not have exactly equal variances between groups [19, 20]. In all tests, a 0.05 significance level was adopted.

The project was approved by the IMIP Research Ethics Committee (CEP) under protocol No. 3483-13 at Annual Meeting on April 10, 2013.

Results

Of the 314 nursing professionals working in the institution's ICU during the study period, 10 of them refused to participate and 22 were in vacation / sick leave. Thus, the sample consisted of 282 subjects, 93.6% females. As for the education of 282 professionals, 45 (16%) were nurses and 237 (84%) were nursing technicians. Age < 35 years prevailed both among nurses (72.7%) and nursing technicians (58.6%). Table 1 shows the professional training characteristics.

Table 1. Professional training characteristics of nurses working at Intensive Care Units in a reference hospital of Recife, Brazil, 2013.

Variables/ Nurses	n = 45*	%
Training time		
< 10 years	14	32.6
≥ 10 years	29	67.4
Graduate studies		
Yes	40	90.9
No	4	9.1
Training in oral care		
Yes	5	11.1
No	40	88.9
ICU working time		
< 1 year	5	11.1
1 to 5 years	18	40
6 or more	22	48.9
Variables/ Nursing technicians	n = 237*	%
Training time		
< 10 years	88	39.1
≥ 10 years	137	60.9
Improvement		
Yes	184	79
No	49	21
Training in oral care		
Yes	70	29.8
No	165	70.2
ICU working time		
< 1 year	27	11.4
1 to 5 years	108	45.6
6 or more	102	43

* The sample size varied due to lack of information.

Table 2 shows the distribution of adequate responses regarding questions about knowledge in oral care of patients under intensive care, according to the degree of professional training, while Table 3 shows the distribution of the adequate responses regarding questions about attitude in oral care.

Table 2. Distribution of adequate responses on knowledge in oral of patients under intensive care in a reference hospital of Recife, Brazil, 2013.

Aspects	Nurse		Nursing technician	
	Adequate responses n= 45	%	Adequate responses n= 237	%
Substances for the procedure				
Do not use water	6	13.3	21	8.7
Use 0.12% chlorhexidine	34	75.6	89	37.7
Do not use hydrogen peroxide	43	95.6	209	88.9
Use mouthwash	37	82.2	181	76.4
Do not use sodium bicarbonate	16	35.6	87	36.7
Frequency of care				
Twice daily	13	28.9	66	28.0
Tools / materials existing in the sector				
Dental floss	16	35.6	68	28.8
Toothbrush	31	68.9	156	66.1
Toothpaste	30	66.7	154	65.2
Gauze	43	95.6	235	99.2
Antiseptic Solution	43	95.6	195	82.3
Oral abnormalities that may interfere with the patient's systemic condition				
Dental caries	41	91.1	184	78
Gingivitis	44	97.8	212	89.8
Periodontal disease	42	95.4	191	81.3
Dental abscesses	44	97.8	209	88.6
Thrush / injuries	41	91.1	209	88.6
Furred tongue	37	82.2	205	86.5
Carried out according to the patient's condition				
Yes	40	88.9	194	81.9
Procedure explained before to the patient / companion				
Yes	32	71.1	234	98.7
Patient's position at the time of performing the technique				
Do not place the patient in the supine position	32	71.1	139	58.9
Do not place the patient in the prone position	41	91.1	218	92.8
Position the patient in the lateral decubitus	14	31.1	86	36.6
Position the patient in elevated supine position	45	100	210	89.4

Table 3. Distribution of adequate responses about attitude in oral care among nursing professionals in Recife, Brazil, 2013.

Aspects	Nurse		Nursing technician	
	Adequate responses n = 45	%	Adequate responses n= 237	%
I believe that oral health care is part of intensive nursing care	45	100	223	94.1
I consider important to perform oral hygiene not only by the sector nursing team	28	62.2	141	59.5
I believe that the oral hygiene technique can be performed by the nursing and dental team	44	97.8	197	83.1
I consider correct to perform change of position at the time of oral hygiene technique for patient in an unconscious state	29	64.44	155	65.7
It is important to perform oral hygiene by the nursing team to patients in intensive care more than once a day	44	97.8	215	91.1
Improper or lack of oral hygiene causes complications in the patient's general condition	44	97.8	197	83.3
The oral hygiene of the patient in intensive care not necessarily should be performed with toothbrush-toothpaste	38	84.4	204	86.1

Table 4 shows the distribution of adequate responses on questions about practice, according to nurses and nursing technicians.

Table 4. Distribution of adequate responses on questions about practice, according to nurses and nursing technicians in Recife, Brazil, 2013.

Aspects	Nurse		Nursing technician	
	Adequate responses		Adequate responses	
	n= 45	%	n= 237	%
Before starting the oral hygiene technique explains to patient and / or companion about the procedure?	41	93,2	229	96,2
Records in the medical record the type of dental care provided?	29	64,4	175	73,8
Records in the medical record, when performing oral hygiene, the patient's oral cavity conditions?	31	68,9	176	74,3

Table 5 shows the comparison of the means of knowledge, attitude and practice about oral health care by age group and professional training characteristics. Among nursing technicians, mean practice was higher among those who had technical expertise in oral care ($p = 0.031$).

Table 5. Distribution of the means of knowledge, attitude and practice on oral health care according to education characteristics of nursing professionals of a reference hospital of Recife, Brazil, PE, 2013.

Characteristics	Knowledge			Attitude			Practice		
	Mean	(SD)	p	Mean	(SD)	p	Mean	(SD)	p
Nurses									
Age									
< = 35 years	7.6	(0.8)	0.255*	8.8	(1.2)	0.306	7.3	(3.4)	0.490
36 or older	7.3	(0.9)		8.2	(2.5)		8.0	(2.6)	
Training time									
≤ 10 years	7.2	(0.9)	0.017	8.4	(2.4)	0.522	7.6	(2.7)	0.722
>10 years	7.6	(0.8)		8.7	(1.2)		7.2	(3.4)	
Graduate studies									
Yes	7.6	(0.9)	0.941	8.7	(1.6)	0.599	7.4	(3.2)	0.961
No	7.5	0.2		8.2	(1.4)		7.5	(3.2)	
Prior training in oral care									
Yes	7.2	(0.9)	0.385	9.7	(0.6)	0.119	7.3	(3.6)	0.913*
No	7.6	(0.9)		8.5	(1.7)		7.5	(3.1)	
ICU working time									
< 1 year	7.5	(0.2)		8.6	(1.0)		8.0	(3.0)	
1 to 5 years	7.7	(0.9)	0.509	8.9	(1.1)	0.698	8.3	(3.1)	0.245**
6 or more	7.4	(0.9)		8.4	(2.0)		6.6	(3.2)	
Nursing technicians									
Age									
< = 35 years	7.0	(1.1)	0.096	8.2	(1.7)	0.059	7.9	(2.7)	0.138
36 or older	6.7	(1.2)		7.8	(1.6)		8.4	(2.5)	
Training time									
≤ 10 years	7.0	(1.0)	0.460	8.1	(1.5)	0.696	8.4	(2.4)	0.346
>10 years	6.9	(1.2)		8.0	(1.8)		8.0	(2.8)	
Technical expertise									
Yes	6.8	(1.2)	0.426	7.9	(1.7)	0.068	8.3	(2.5)	0.031
No	7.0	(1.0)		8.4	1.7)		7.4	(3.1)	
Prior training in oral care									
Yes	7.0	(1.0)	0.250	8.0	(1.9)	0.888	8.6	(2.3)	0.099
No	6.8	(1.2)		8.0	(1.6)		8.0	(2.7)	
ICU working time									
< 1 year	6.9	(1.0)	0.973	8.0	(1.5)		7.5	(3.0)	
1 to 5 years	6.8	(1.2)		8.1	(1.7)	0.806	8.1	(2.7)	0.375
6 or more	6.9	(1.0)		7.9	(1.8)		8.3	(2.5)	

* Student's t test; ** ANOVA Test.

Discussion

According to the results obtained, most nurses had graduate degree and nursing technicians had technical expertise, showing their concern to update, as their professional activities are developed in a teaching hospital, a fact that requires constant knowledge renewal. However, despite the findings in literature showing the influence of oral health on the evolution of the health condition of inpatients [16, 21-24], 88.9% of nurses and 70.2% of nursing technicians do not have training in oral care (Table 1), confirming that most of the time knowledge in oral care is acquired empirically. Many are unaware of the effects of oral health conservation on the general body conditions, which explains that in clinical practice, oral health care is often neglected [6,12,13].

Regarding the substance used for oral hygiene procedure, the percentage of adequate responses of nurses on the use of 0.12% chlorhexidine is dissimilar to responses of nursing technicians. Although 75.6% of nurses have the knowledge that chlorhexidine is the most suitable substance for the oral hygiene in hospitalized patients, only 37.7% of nursing technicians have this knowledge. This fact may indicate the lack of communication among nurses, who are holders of knowledge, to the team of technicians, and similar data can be seen in another study, in which 50% of supervisors pass information on oral hygiene for nursing technicians [13].

Among oral antiseptics, chlorhexidine is one of the most potent and studied antimicrobial agents; it is highly effective and generally used as the standard in relation to the power of other agents. During hospitalization, the cleaning of these patients becomes deficient or absent, a fact that results in plaque accumulation. For intubated patients, the breathing tube is an aggravating factor, which can be colonized by bacteria, leading to the installation of nosocomial pneumonia, a major problem daily faced in ICUs. Through its chemical properties and mechanism of action, chlorhexidine at low concentrations is considered bacteriostatic and at high concentrations, acts preventively in reducing plaque, and is the gold standard substance for use in patients with physical limitations, fact that occurs in patients hospitalized in ICUs [12,14,21,25].

Importantly, some substances like sodium bicarbonate (65.4%) and hydrogen peroxide (4.4%) are mentioned as alternatives to oral hygiene; however, these substances do not provide the desired antiseptic action to reduce local microbial flora, leading to greater likelihood of infectious complications that could compromise the overall health condition of ICU patients [14]. Therefore, an alternative to the use of chlorhexidine are mouthwashes, which have antiseptic action and are indicated for patients using chlorhexidine for over 20 days in a hospital environment. Although the desirable effects of chlorhexidine are widely known, its extended use has some side effects such as changes in taste and tooth staining [26].

Although studies scientifically supported by oral care protocols in hospitalized patients recommend oral hygiene frequency of 12 hours, or twice a day [21,26-28], lack of knowledge on the daily frequency of oral hygiene was observed in both professional categories. This probably stems from the difficulties presented by the health condition of the patient hospitalized at an ICU, and the

lack of knowledge by professionals on the chemical properties and mechanism of action of chlorhexidine, as mentioned above.

The ideal tool / material that best matches the needs of hospitalized patients consists of toothbrush with toothpaste for conscious patients, and spatula with gauze moistened with chlorhexidine or mouthwash for unconscious patients [1,27]. When asked in the category knowledge about the relationship of tools / materials existing in the sector that should be used in the oral health care, more than 30% of professionals in both categories found that the use materials such as dental floss, toothbrush and toothpaste is not important. Although more than 70% of professionals have knowledge about diseases such as caries, gingivitis, periodontal disease, furred tongue, among others might interfere with the patient's systemic condition [14,16,21,22], they are unaware that primary prevention by the mechanical method must be made, even in the hospital environment according to the patient's physical condition due to its simplicity and proven efficiency through the use of dental floss, toothbrush and toothpaste [11,21].

When asked about the explanation given to the patient and/or companion at the time of completion of the oral care, almost 30% of nurses reported they do not explain the act, fact said as fundamental in the success of the treatment offered. The patient's acceptance and cooperation depends on the approach. When this is done in a humane way, i.e., identifying the patient by the name, informing him about the procedure to be performed, the chances to succeed in the intervention and consequently the recovery rate are higher [9].

Regarding the position of the patient at the time of completion of the oral care technique, low percentage of adequate responses in relation to the change in position to the lateral decubitus position was found. This practice should be applied, because, in addition to providing comfort, it minimizes the risk of aspiration of secretions from the oral cavity, which may carry potential respiratory pathogens. Authors stress that the lateral decubitus technique is essential so that oral hygiene is effectively performed. However, in their studies, they found that this technique is not performed in practice [9,14].

In attitude section, 37.8% of respondents do not consider it important to conduct oral hygiene by other professionals, which shows that most professionals identify their responsibility to the daily care of hygiene and comfort, including oral hygiene. However, most of these professionals were not trained in their undergraduate and graduate courses and technical specialization for activities related to oral health care and various misconceptions are applied and other priorities are given [1,2,12-14,16].

When asked about the change of position at the time of oral hygiene technique, almost 40% do not think that changing the patient's position is correct, which goes against the knowledge section, in which there is lack of knowledge by professionals of the positions indicated for bedridden patients, especially for positioning the patient in lateral decubitus, which is a safe and efficient technique for oral hygiene [9].

Regarding practice, 35.6% of nurses and 26.2% of nursing technicians do not record in the medical record the type of oral care performed in hospitalized patients. It is known that notes relating to the care provided are as important as their performance [29]. In hospital practice, it is observed that most of the care activities implemented with patients, guidelines that are provided and referrals that are performed by the nursing team are not recorded and therefore not documented anywhere, leading to the perception that the nursing work is restricted to what was recorded. On the other hand, recordings are concise and almost telegraphic and often do not express the extent, complexity and importance of what was done by the nursing team [29].

Likewise, nearly 30% of professionals in both categories do not record in the medical record the oral health conditions of the patient. These data are not in agreement with one study [6], which showed that even part of the protocol adopted in the institution under study, almost 50% of professionals do not record in the medical record the needs of hospitalized patients regarding oral hygiene care. Recordings should contain data described in a concrete and objective way, including the characteristics of the oral cavity out of normal limits. It is based on these data that the nursing staff can trace specific care plans according to each case [9]. The medical record is a way to share information among health professionals, thus ensuring patient safety and continuity of care [29].

When considering knowledge, attitude and practice according to some professional training features such as training time, graduate degree/technical expertise, previous oral care training and ICU working time, there was no better performance related to nurses. However, for nursing technicians in the practice section, better performance was found among professionals with technical expertise.

This study had as limitation the fact that it is based on subjective data collected through a questionnaire, which could limit or induce some responses. The evaluation of attitude and practice only based on information from professionals without direct observation of the management of oral health care is another limitation that should be considered.

Despite the limitations, the study showed results that can be useful for organization of health services regarding oral health care that can and should be part of the daily care provided to hospitalized patients. It is understood that it is of great importance the participation of a dentist as part of the multidisciplinary team to carry out prevention and oral health evaluation, helping the nursing staff in procedures related to oral care.

The gaps in knowledge, attitude and practice observed can help identifying points to be developed and emphasized in various continued education programs for nursing professionals.

Conclusion

For nursing technicians in the practice section, oral health activity can be compromised by those who lack technical expertise.

Acknowledgments

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References

1. Araújo RJG, Oliveira LCG, Hanna LMO, Corrêa AM, Carvalho LHV, Alvares NCF. Perceptions and actions of oral care performed by nursing teams in intensive care units. *Rev Bras Ter Intensiva* 2009; 21(1):38-44.
2. Brasil. Lei no. 7498 de 25 de junho de 1986. Dispõe sobre a regulamentação do exercício da Enfermagem. Diário Oficial [da República Federativa do Brasil], Brasília, 25 de jun. de 1986.
3. Benedet AS, Brasil N. A sistematização da assistência de enfermagem e as necessidades de cuidados de pacientes internados em terapia intensiva. *Rev Eletrônica Gestão & Saúde* 2012; 3(2):800-15.
4. Pannuti CM, Lotufo RFM, Cai S, Freitas NM, Ferraro AQ. Prevalence of superinfecting microorganisms in the bacterial plaque of institutionalized subjects with cerebral palsy. *RPG Rev Pos-grad* 2001; 8(1):35-9.
5. Barbosa JCS, Lobato OS, Menezes SAF, Menezes TOA, Pinheiro HHC. Perfil dos pacientes sob terapia intensiva com pneumonia nosocomial: principais agentes etiológicos. *Rev Odontol UNESP* 2010; 39(4):201-6.
6. Almeida RF, Pinho MM, Lima C, Faria I, Santos P, Bordalo C. Associação entre doença periodontal e patologias sistêmicas. *Rev Port Clín Geral* 2006; 22(3):379-90.
7. Faical AMB, Mesas AE. Cuidados com a saúde bucal de paciente hospitalizados: conhecimentos e práticas dos auxiliares de enfermagem. *Rev Espaço para a Saúde* 2008; 10(1):1-6.
8. Rabelo GD, Queiroz CI, Santos PSS. [Dental care in a patient in intensive care unit]. *Arq Med Hosp Cienc Med Santa Casa São Paulo* 2010; 55(2):67-70.
9. Martins GC, Santos NO, Gomes ET. Higiene oral: atuação da equipe de enfermagem em paciente com déficit no autocuidado. *Rev Enf Integr* 2009; 2(1):144-51.
10. Berry AM, Davidson PM, Masters J, Rolls K. Systematic literature review of oral hygiene practices for intensive care patients receiving mechanical ventilation. *Am J Crit Care* 2007; 16(6):552-62.
11. Silveira IR, Maia FOM, Gnatta JR, Lacerda RA. Higiene bucal: prática relevante na prevenção de pneumonia hospitalar em pacientes em estado crítico. *Acta Paul Enferm* 2010; 23(5):697-700.
12. Schlesener VRF, Rosa UD, Raupp SMM. O cuidado com a saúde bucal de pacientes em UTI. *Cinergiss* 2012; 13(1):73-8
13. Araújo MVM, Vieira MP, Bonan PRF, Costa SM. Atuação dos profissionais de enfermagem nos cuidados com a higiene bucal de idosos institucionalizados em Montes Claros, MG. *Rev APS*, 2010; 13(1):10-7.
14. Caldeira PM, Cobucci RAS. Higiene oral de pacientes em intubação orotraqueal internados em uma unidade de terapia intensiva. *Rev Enf Integr* 2011; 4(1):731-41.
15. Machado SPCI, Samico IC, Braga TDA. Conhecimento, atitude e prática sobre fototerapia entre profissionais de Enfermagem de hospitais de ensino. *Rev Bras Enferm* 2012; 65(1):34-41.
16. Bello RF, Casotti E, Souza MCA. Atenção básica na alta complexidade: o cuidado em saúde bucal com o paciente hospitalizado. *Rev Flum Odontol* 2010; 16(34):3-6.
17. Abidia RF. Oral care in the intensive care unit: a review. *J Contemp Dent Pract* 2007; 8(1):76-82.
18. Likert R. A technique for the measurement of attitudes. *Arch Psychol* 1932; 22(140):1-55.
19. Guind V, Rasch D. The robustness of two sample tests for means a reply on von eye's comment. *Psychol Scie* 2004; 46(4):549-54.
20. Norman G. Likert scales, levels of measurement and the "laws" of statistics. *Adv Health Sci Educ Theory Pract* 2010; 15(5):625-32.
21. Gomes SF, Esteves MCL. Atuação do cirurgião-dentista na UTI: um novo paradigma. *Rev Bras Odontol* 2012; 69(1):67-70.
22. Aranega AM, Bassi APF, Ponzoni D, Wayama MT, Esteves JC, Garcia Junior IR. [What is the importance of Hospital Dentistry?] *Rev Bras Odontol* 2012; 69(1):90-3.
23. Pizzo G, Guiglia R, Lo Russo L. Dentistry and internal medicine: from the focal infection theory to the periodontal medicine concept. *Eur J Intern Med* 2010; 21(6):496-502.

24. Morais TMN, Silva A, Avi ALRO, Souza PHR, Knobel E, Camargo LFA. [Importance of dental work in patients under intensive care unit]. Rev Bras Ter Intensiva 2006; 18(4):412-7.
25. Pimentel P, Freitas C, Guatimosim P, Lage L, Pasetti L, Souza AF, Martins MTF. Introdução da rotina de visitas odontológicas e descontaminação oral aos pacientes sob cuidados intensivos. Portal da medicina oral. [Accessed on 23 Oct. 2014]. Available at: http://www.cemoi.com.br/artigos_cientificos/OI_30.pdf.
26. Nemann I. Soluções utilizadas para higiene oral em pacientes de terapia intensiva: uma revisão integrativa de literature. [Tese]. Porto Alegre: Escola de Enfermagem, Universidade Federal do Rio Grande do Sul; 2011.
27. Suzanne Pear S, Stoessel K, Shoemake S. Cuidados bucais são cuidados críticos: O papel dos cuidados bucais na prevenção da pneumonia adquirida em hospital. Guia de estudo. [Accessed on 23 Oct. 2014]. Available at: <http://www.kcdigestivehealth.com/docs/Cuidados%20Bucalis-Guia%20de%20estudo.pdf>.
28. Pimpão FD, Lunardi Filho WD, Helena Heidtmann Vaghetti HH, Lunardi VL. [Nursing staff perception of nursing records: systematizing nursing care]. Rev Enferm UERJ 2010; 18(3):405-10.
29. Timby BK. Conceitos e habilidades fundamentais no atendimento de enfermagem. 8. ed. Porto Alegre: Artmed, 2007. 912p.