

# Aspects of dental care for patients hospitalized in a medical clinic from a university hospital

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## ABSTRACT

**Introduction:** The current context of multiprofessional approach in health is based on quality of care and patient safety, with the key contribution of the dentist in the hospital team to improve the health of hospitalized patients. **Objective:** To characterize the systemic and buccal profile of patients treated in a medical clinic of a University Hospital from the Brazilian Public Health System, aiming to provide information for guiding dental care in the multidisciplinary attendance in the hospital setting. **Methods:** Retrospective observational study carried out on 104 clinical records with data collection about general characteristics, systemic alterations, habits, oral situation and dental treatments of hospitalized patients attended by the dentist. **Results:** There was a high frequency of hypertensive patients (36.5%) and with cardiac problems (33.6%). A significant association between diabetes (60%) and hypertension (50%) in the age group from 60 to 75 years of age was observed. For most patients, the frequency of oral hygiene was less than three times a day (54.3%), without flossing (85.7%). Biofilm (73.3%), dental calculus (70.5%), prosthesis use (25.7%), with poor hygiene (14.3%) and prosthetic stomatitis (8.6%) were recorded. Among the treatments performed by dentist, basic periodontal therapy (71.4%) and exodontia (39%) were noteworthy. **Conclusion:** The high frequency of biofilm presence, dental calculus, prosthesis with poor hygiene and basic periodontal therapy performed during the hospitalization denote the need for dental care with preventive activities.

**Keywords:** hospitalization; oral health; health profile; comprehensive dental care.

## INTRODUCTION

The current context of the multiprofessional approach to health is based on the quality of care and patient safety<sup>1</sup>. Thus, dental professionals can contribute to a hospital team in other sectors besides the intensive care unit, or denote the importance of including dental surgeons to improve the health condition and quality of life of hospitalized patients<sup>2</sup>. Therefore, it is necessary that professionals understand the possible connection between oral diseases and systemic diseases<sup>3,4</sup>, as well as the clinical-demographic factors.

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In this sense, dental intervention in the hospital context confirms public health policies at the tertiary level of health care for the population<sup>5</sup>. This insertion was reinforced by the Resolution No. 162 of 11/03/2015 of the Conselho Federal de Odontologia (CFO), which recognizes the practice of Hospital Dentistry in Brazil<sup>6</sup>. Thus, the dentist can act comprehensively, and should be encouraged, since graduation, to understand the differential aspects in the planning of dental treatment and in the multidisciplinary service<sup>5</sup>.

The continuous improvement of professionals in permanent training inserted in the hospital is growing<sup>7</sup>. This context allows the identification of communities at high risk of diseases, as well as the adequate targeting of services and resources, aiming at reducing oral health problems in the population<sup>7</sup> and the increased risk of hospitalization<sup>8</sup>.

Thus, it becomes relevant to disclose aspects associated with the professional demand of the dentist in the interdisciplinary health team in tertiary care establishments.

To this end the present study aimed to characterize the systemic and oral profile of patients seen at a medical clinic at a Hospital Universitário do Sistema de Saúde Pública do Brasil, in Brazil, aiming to provide subsidies in directing dental care to multidisciplinary care at the hospital level.

## METHODS

The research was conducted at the Hospital Universitário da Universidade Federal do Maranhão (HUUFMA) - Presidente Dutra Unit, an organ of the Brazilian federal public administration which aims to encompass assistance, teaching, research and extension in the health area, being a state reference for highly complex procedures. HU/UFMA works as a field of practice for the Integrated Multiprofessional Residency in Health programs (Residência Integrada Multiprofissional em Saúde, RIMS), which are *latu sensu* graduate teaching modalities focused on in-service education and aimed at the professional categories that integrate the health field, except the doctor.

This is a retrospective observational study, with secondary data, through the retrieval of dental records (clinical files) of 104 patients admitted to the Medical Clinic sector of that hospital, attended by the resident dentist at the dentistry office of the hospital in a period from two years from 2012 to 2013. Only the clinical records of patients treated by the RIMS dentistry team at the HU/UFMA Medical Clinic were included. The clinical records of patients who did not perform anamnesis and clinical intra and extra-oral examination, which were incomplete, and those of patients treated by non-resident professionals were excluded from the study.

Data were collected on general characteristics, systemic changes, dental information, life habits, and frequencies, oral situation

at the first visit (presence of visible biofilm and dental calculus), presence and conditions of dental prostheses, treatments to which patients were subjected. prior to hospitalization, procedures performed during hospitalization.

The data obtained were submitted to descriptive statistics, through the Software Epi Info for Windows Program (CDC, Atlanta, USA), where Fisher's Exact and Chi-square tests were also used, at a significance level of 5%.

The research was approved by the Ethics Review Committee from the Núcleo de Ensino e Pesquisa do HU/UFMA (Approval Protocol No. 862,911), following the rules of Resolution No. 466/2012 of the Ministry of Health from Brazil.

## RESULTS

It was observed that the patients seen had ages varying from 9 to 75 years old, being 58 women and 46 men. It was found that the majority of the clinical files in the sample (78.1%) contained routine care as a reason for dental consultation, which is characterized by the active search performed by the dentist (without a medical opinion or request), highlighting Cardiology (21%) as the main specialty of origin of the total number of patients seen (Table 1).

As for the systemic changes of patients admitted to the Medical Clinic, hypertension (36.5%) and heart problems (33.6%) were the most common in the sample. When classified by age group, there was a significant higher frequency of diabetes and hypertension in individuals aged 60 to 75 years (Table 2).

**Table 1:** Characteristics and general information of patients admitted to the Medical Clinic attended by the dentist at HUUFMA. São Luís, Maranhão, Brazil, 2012-2013.

Variable	N	%
Sex		
Male	46	44.3
Female	58	55.7
Age group		
9 to 17 years	9	8.65
18 to 35 years	23	22.11
36 to 59 years	38	36.53
60 to 75 years	34	32.69
Reason for dental consultation		
Pre-transplant consultation	1	1.0
External routing	1	1.0
Active search	82	78.1
Internal opinion	8	7.6
Not specified	12	12.4
Assisted specialties		
Gastronomy	9	8.6
Pneumology	7	6.7
Cardiology	22	21.0
Nephrology	10	9.5
Neurology	20	19.0
Bucocomaxilofacial	3	2.9
Endocrinology	2	1.9

Considering the behavioral information in dental care, 81.9% of the participants were considered patients receptive to the dental approach, highlighting some who reported having had a negative dental experience (15.2%). Regarding oral hygiene habits, it was found that most brushed their teeth less than 3 times a day (54.3%) and did not use dental floss (85.7%) (Table 3).

At the first visit of the patients, the presence of dental biofilm (73.3%), dental calculus (70.5%), and pallor of the mucosa (32.4%), partial (25%) or total (6.7%) edentulism. The most common oral changes were: prosthetic stomatitis (8.6%), ulcerative lesion (2.9%) and leukoplakia (2.9%). (Table 4). Exodontics was the treatment prior to hospitalization, with the highest percentage (23.8%); During the hospitalization period, basic periodontal therapy (71.4%) and oral hygiene guidelines provided to all patients stood out.

## DISCUSSION

The present study sought to characterize the systemic and oral profile of patients seen at a medical clinic at a Hospital Universitário from the Brazilian public health system, aiming to provide subsidies for directing dental care and multidisciplinary care at the hospital level. It is noteworthy that in the Medical Clinic sector, 36.5% of hospitalized patients were hypertensive and 34.3% had heart problems. There was a significant frequency of hypertensive patients (60%) and diabetics (50%) in the age group from 60 to 75 years old. In this study, there was no record of hospitalization of patients with Diabetes in the age group below 36 years. This situation can be explained by the chronicity of the

disease, in which the complications of its silent course are asymptomatic in the early years, and with a high proportion of undiagnosed adults<sup>9</sup>. Hypertensive individuals were represented in all age groups in this sample, and the number increased with age.

However, it is important to stress that systemic arterial hypertension is one of the risk factors for the development of cardiovascular diseases, and stands out for being important co-responsible for the causes of death<sup>10</sup>, in addition to the high prevalence and low control rates<sup>11</sup>, reaching mainly older people<sup>12</sup>. Thus, the permanent education of health professionals at the different levels of complexity

**Table 3:** Dental information, lifestyle habits related to the oral health of patients admitted to the Medical Clinic attended by the dentist at HUUFMA. São Luís, Maranhão, Brazil, 2012-2013.

Dental information and lifestyle habits	n	%
Total	104	100%
Number of brushings		
Less than 3x day	57	54.3
Three or more x day	47	44.8
Flossing	11	10.5
Prosthesis use	27	25.7
Prosthesis type		
Removable Partial Prosthesis	12	11.4
Dentures	13	12.4
Fixed prosthesis	2	1.9
Prosthesis hygiene		
Poor	15	14.3
Good	12	11.4
Smoking	5	4.8
Alcohol	8	7.6
Mouth Breather	22	21.0
Gritting teeth	6	5.7
Nail biting	9	8.6

**Table 2:** Distribution of systemic changes of patients admitted to the Medical Clinic attended by the dentist at HUUFMA, according to age group. São Luís, Maranhão, Brazil, 2012-2013.

Systemic changes	n	Age group n (%)				p*
		9-17	18-35	36-59	60-75	
Allergy	28	3 (10.7%)	8 (28.5%)	7 (25.0%)	10 (35.7%)	0.11
Anemia	31	5 (16.1%)	6 (19.3%)	9 (29.0%)	11 (35.4%)	0.30
Asthma	9	1 (11.1%)	4 (44.4%)	3 (33.3%)	1 (11.1%)	0.50
Coagulopathies	11	2 (18.1%)	4 (36.3%)	3 (27.2%)	2 (18.1%)	0.76
Diabetes	20	0 (0.0%)	0 (0.0%)	8 (40.0%)	12 (60.0%)	0.01
Hemorrhagic disorder	13	1 (7.6%)	2 (15.3%)	7 (53.8%)	3 (23.0%)	0.64
Psychological disorder	13	1 (7.6%)	4 (30.7%)	3 (23.0%)	5 (38.4%)	0.68
Endocarditis	3	0 (0.0%)	0 (0.0%)	1 (33.3%)	2 (66.6%)	0.34
Epilepsy	8	1 (12.5%)	5 (62.5%)	1 (12.5%)	1 (12.5%)	0.08
Rheumatic fever	7	2 (28.5%)	2 (28.5%)	0 (0.0%)	3 (42.8%)	0.37
Herpes	28	6 (21.4%)	7 (25.0%)	8 (28.5%)	7 (25.0%)	0.09
Hypertension	38	2 (5.2%)	4 (10.5%)	13 (34.2%)	19 (50.0%)	0.01
Heart Disorder	35	2 (5.7%)	5 (14.2%)	14 (40.0%)	14 (40.0%)	0.55
Gastric disorder	17	0 (0.0%)	5 (29.4%)	7 (41.17%)	5 (29.4%)	0.59
Hepatic disorder	21	2 (9.5%)	5 (23.8%)	9 (42.8%)	5 (23.8%)	0.70
Hormonal disorder	12	1 (8.3%)	1 (8.3%)	5 (41.6%)	5 (41.6%)	0.14
Syphilis	1	0 (0.0%)	1 (100%)	0 (0.0%)	0 (0.0%)	0.17
Tuberculosis	9	0 (0.0%)	0 (0.0%)	6 (66.6%)	3 (33.3%)	0.36
Tumor	11	2 (18.1%)	3 (27.2%)	3 (27.2%)	3 (27.2%)	0.61

\*Fisher's exact test ( $\alpha=0.05$ ).

of the SUS provides the basis for consolidating the actions that will impact the reduction of mortality and morbidity rates, through multidisciplinary action in primary and secondary prevention measures of cardiovascular diseases, representing the highest percentage of Noncommunicable Chronic Diseases (CNCDS)<sup>13</sup>.

It is noteworthy that the elderly often have CNCDS<sup>14</sup>, in which the chronic low-grade systemic inflammation observed in aging tends to be an important risk factor for morbidity and mortality, and the infectious burden in an older adult can have consequences worse than in a younger individual<sup>15</sup>.

Most patients in this research reported that they brushed their teeth less than three times a day (54.3%), and reported not using dental floss (85.7%). There was also a high number of patients with biofilm (73.3%) and dental calculus (70.5%). Therefore, this situation requires the dentist to act with preventive activities, prioritizing less invasive actions, with training and correct professional adaptation<sup>16</sup>, which have been shown to be important in the incorporation of patients' oral hygiene into the hospital routine, aiming at reducing dental biofilm and possible infections from the oral microbiota, since they have been related to the increased risk of hospitalization<sup>8</sup>.

The importance of oral hygiene guidance to hospitalized patients becomes more indispensable, as hospitalization has an influence on the oral health status of patients in non-intensive care units, even in short periods<sup>17,18</sup>. Recent findings in the literature have reinforced this need for action<sup>19-21</sup>. Even independent patients presented deficient oral hygiene (48.81%), detecting a high frequency of changes in the oral cavity that are added to oral problems prior to hospitalization<sup>19</sup>. Likewise, this is a reality that affects several age groups, as in a study from another hospital, 99% of those responsible for hospitalized children did not receive professional guidance on oral hygiene<sup>20</sup>, and in a sample with hospitalized adolescents from another Brazilian state, results point out that only 2.3% of patients received oral hygiene guidance at the hospital<sup>21</sup>.

It is noteworthy that, in this study, oral hygiene guidelines were provided to all patients, confirming that the promotion of

collective oral health in a hospital environment has provided knowledge, motivation of good habits to hospitalized patients and companions, aiming at comprehensive and more humanized<sup>22</sup>.

However, systemic conditions pre-existing at the hospitalization period have the potential to alter the oral environment and the normal symbiotic relationships of the host with its resident microorganisms<sup>17</sup>. Thus, it is suggested that tooth loss with age may signal the presence of some underlying systemic comorbidity. In the sample of the present study, it can be seen that a remarkable number of the patients seen had partial (25%) or total (6.7%) edentulism. Similar findings were found in a retrospective descriptive study of clinical records of patients treated by the multiprofessional residency, in which 23.94% of patients used some type of dental prosthesis, with an edentulism rate of 22.87%<sup>19</sup>.

Our research data shows prosthetic stomatitis in 8.6% of patients, ulcerative lesion and leukoplakia with 2.9% each and candidiasis with 1%. Similar frequencies were found in another retrospective study on prosthetic stomatitis (6.38%) and leukoplakic lesions (2.13%)<sup>19</sup>. However, in another university hospital in Brazil, pseudomembranous and erythematous candidiasis were the most common changes found (22.8%), but it was performed at the Department of Infectious Diseases<sup>23</sup>. An explanation for the divergent results is at the research site within the hospital, as the present research was with patients admitted to the Medical Clinic, assisted in the Dentistry Sector.

Regarding dental treatments prior to hospitalization, it was found that tooth extraction was the one with the highest percentage (23.8%), revealing the failure of conservative treatment in the past. This reality shows that hospitalized patients' access to dental care becomes easier, since the deficient oral condition prior to hospitalization suggests the difficulty in dental care services<sup>19</sup>. This reality highlights the importance of hospital dental care as a unique moment for patients with systemic impairment.

Among the treatments performed by the resident during the hospitalization period, periodontal basic therapy stands out (71.4%). There are similarities between these results and those of other studies<sup>5,24</sup>, in which the type of treatment most frequently performed by Hospital Dentistry was periodontal treatment. This reality reflects the need for greater training of dental professionals in these areas of concentration for the routine of Hospital Dentistry.

The fact that the present study was carried out based on secondary data is a limitation of this study, however, it highlights the invaluable relevance in making the records in dental records, including for future consultations in teaching hospitals<sup>25</sup>. It is added that the improvement of these records at the individual level can boost the ability to explore causal paths between diseases and provide adequate public health care services<sup>7</sup>. Thus, the differential of our study is based on relevant information for an overview of the oral conditions of hospitalized patients, based on information recorded by resident dental professionals, who follow the hospital routine on a daily basis.

**Table 4:** Oral situation in the first dental care of 104 of the patients admitted to the Medical Clinic at HUUFMA. São Luís, Maranhão, Brazil, 2012-2013.

Oral situation	N=104	%
Dental biofilm	77	73.3
Dental calculus	74	70.5
Gingival recession	9	8.6
Dental mobility	13	12.4
Lingual coating	18	17.1
Halitosis	18	17.1
Mucosal pallor	34	32.4
Prosthetic stomatitis	9	8.6
Leukoplakia	3	2.9
Fibrous hyperplasia	3	2.9
Ulcerative lesion	3	2.9
Candidiasis	1	1.0

The patients seen at the medical clinic of this hospital had a predominant age range of 36 to 59 years, with hypertension and heart problems. Diabetes and hypertension were more significant in the elderly, but indicate the need for prevention at other ages, inserted in the context of multidisciplinary actions against NCDs. Poor oral

care prior to hospitalization was revealed by tooth loss; and the greater frequency of presence of biofilm, dental calculus, dentures with poor hygiene and basic periodontal therapy performed during the hospitalization period denote the need for dental work with preventive activities, referring to the guidelines for oral care and prostheses.

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