

Epidemiological and clinical profile of patients seen at a school clinic

Perfil epidemiológico e clínico dos pacientes atendidos em uma clínica escola

Perfil epidemiológico y clínico de los pacientes atendidos en una clínica escuela

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REVISA

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RESUMO

Objective: To describe the epidemiological and clinical characteristics of patients treated at the Dental School Clinic of the University Center of Excellence-Unex. Method: The study was submitted to the research ethics committee and conducted through data collection from patient records. Data on the participants' sociodemographic, clinical, and behavioral profiles were gathered and documented in a data collection instrument designed for the study. Results: A total of 73 individuals were included, with a predominance of female patients (53.4%), individuals identifying as mixed-race/Black (61.6%), and those under 45 years of age (57.5%). Regarding systemic diseases, 30.1% of patients presented at least one condition. Among them, 54.5% had cardiovascular diseases, 36.4% had endocrine diseases, and 27.3% had respiratory diseases. The most prevalent condition was systemic arterial hypertension (15%). A statistically significant association was observed between being 45 years or older and having hypertension (p-value = 0.003). Conclusion: The findings highlight the need for an integrated and collaborative approach between medical and dental professionals in the care of patients with chronic conditions.

Descriptors: Medicine; Dentistry; Public Health; Metabolic Diseases.

ABSTRACT

Objetivo: Descrever as características epidemiológicas e clínicas dos pacientes atendidos na Clínica Escola de Odontologia do Centro Universitário de Excelência-Unex. Método: O estudo foi submetido ao comitê de ética em pesquisa e realizado através da coleta de dados nos prontuários dos pacientes. Foram levantados dados relacionados aos perfis sociodemográfico, clínico e comportamental dos participantes. Estes foram documentados em um instrumento de coleta criado para a pesquisa. Resultados: Foram incluídos 73 indivíduos, dentre os quais houve predomínio da população feminina (53,4%), pardos/negros (61,6%) e abaixo dos 45 anos (57,5%). Ao analisar as doenças sistêmicas em geral, 30,1% apresentavam, destas, 54,5% apresentavam doenças cardíacas, 36,4% apresentavam doenças endócrinas, 27,3% apresentavam doenças respiratórias. A doença mais frequente foi a hipertensão arterial sistêmica (15%). Ao realizar a análise de associação, foi observada associação estatisticamente significante entre ter 45 anos ou mais e apresentar hipertensão (p-valor= 0,003). Conclusão: É evidente a necessidade do paciente portador de condições crônicas de tratamento conjunto e colaborativo entre os profissionais médico e odontólogo no cuidado da sua saúde.

Descritores: Medicina; Odontologia; Saúde Coletiva; Doenças Metabólicas.

RESUMEN

Objetivo: Describir las características epidemiológicas y clínicas de los pacientes atendidos en la Clínica Escuela de Odontología del Centro Universitario de Excelencia-Unex. Método: El estudio fue sometido al comité de ética en investigación y realizado a través de la recopilación de datos en los historiales clínicos de los pacientes. Se recopilaron datos relacionados con los perfiles sociodemográfico, clínico y conductual de los participantes, los cuales fueron documentados en un instrumento de recolección creado para la investigación. Resultados: Se incluyeron 73 individuos, entre los cuales predominó la población femenina (53,4%), mestizos/negros (61,6%) y menores de 45 años (57,5%). Al analizar las enfermedades sistémicas en general, el 30,1% las presentaban, de las cuales el 54,5% eran enfermedades cardíacas, el 36,4% enfermedades endocrinas y el 27,3% enfermedades respiratorias. La enfermedad más frecuente fue la hipertensión arterial sistémica (15%). Al realizar el análisis de asociación, se observó una asociación estadísticamente significativa entre tener 45 años o más y presentar hipertensión (p-valor = 0,003). Conclusión: Es evidente la necesidad de que los pacientes con condiciones crónicas reciban un tratamiento conjunto y colaborativo entre los profesionales médicos y odontólogos para el cuidado de su salud.

Descriptores: Medicina; Odontología; Salud Pública; Enfermedades Metabólicas.

ORIGINAL

Introdução

The patient's medical history is highly important as it provides insight into their health status, allowing for the identification of systemic diseases that may impact the feasibility of treatment. Assessing the individual's overall condition and implementing preventive measures enhance clinical safety in patient care (1).

A patient's systemic health status can influence the outcome of dental treatment and, consequently, endodontic treatment. The main groups of systemic diseases include diabetes mellitus (DM) and cardiovascular diseases (CVD), which are notably prevalent and, therefore, significant concerning oral affections (2).

The correlation between systemic diseases and typical oral clinical conditions has been documented in the literature, as the presence of chronic inflammatory processes at the oral level may prevent some patients from following a specific therapeutic pathway, such as chemotherapy for cancer patients (3).

It is estimated that approximately 100 systemic diseases present oral manifestations, especially when associated with risk factors such as smoking, alcohol consumption, and obesity. However, there is a lack of patient awareness regarding this association—around 70% of patients are unaware of it, which tends to contribute to potentially preventable hospitalizations. The oral-systemic connection occurs through common inflammatory cascades—pro-inflammatory cytokines. Consequently, systemic inflammation contributes to the onset and severity of oral affections, while oral affections can facilitate the passage of bacteria into the bloodstream, thereby exacerbating systemic inflammation (4). On the other hand, Grant (5) argues that this relationship is not causal but rather defined by the various shared risk factors.

Diabetes mellitus is a chronic endocrine disorder—the most common of the 21st century—that encompasses metabolic diseases characterized by hyperglycemia due to defects in insulin secretion, action, or both. Due to its high prevalence, severity, and complications, it is a global public health concern (5,6). Acute and prolonged hyperglycemia causes debilitating health complications such as retinopathy, neuropathy, nephropathy, cardiovascular effects, and poor/delayed wound healing. Currently, due to the high prevalence of periodontitis in diabetic patients, it has been identified as the sixth complication of diabetes, with evidence indicating a threefold higher risk of developing periodontal disease in the context of this metabolic disorder (4,6,7). This premise also operates as a bidirectional pathway, as patients with periodontitis are more likely to develop diabetes (7).

In this regard, it is striking the significant lack of awareness among diabetic patients about the possibility of oral affections—73% are unaware of the connection. This has been mainly attributed to the lack of communication from healthcare professionals and even a lack of knowledge among dental professionals about the patient's systemic condition. However, among those patients aware of the relationship, there was greater adherence to oral hygiene practices, highlighting the importance of awareness (6).

In the context of cardiovascular diseases—disorders of the blood vessels such as coronary artery disease, congestive heart failure, cerebrovascular disease, and peripheral vascular disease. These conditions are responsible for

about one-third of all deaths worldwide. The relationship between these diseases and dental health is bidirectional and still requires clarification regarding the role of cardiovascular diseases in periodontitis. For instance, patients with acute myocardial infarction tend to have more periapical lesions, cavities, and bone loss than healthy individuals (7).

Metabolic syndrome (MS) – according to the National Cholesterol Education Program Adult Treatment Panel III – refers to the coexistence of at least three of the following factors: increased abdominal circumference (the predominant predictive factor); reduced plasma HDL levels; elevated plasma triglyceride levels; high blood pressure; elevated blood glucose. This syndrome has been bilaterally associated with periodontitis in several studies. It is noted that there is a 2.6-fold higher risk of developing this oral condition in patients with diagnosed metabolic syndrome (7). In this regard, studies indicate that this elevated risk occurs due to changes in the levels of adipokines—molecules secreted by adipose tissue, such as adiponectin and leptin—in individuals with high BMI. Leptin modulates the function of immune cells and, in the condition of metabolic syndrome, tends to increase, which in the periodontal tissue results in impaired regenerative capacity and contributes to the destruction of alveolar bone tissue. In contrast, adiponectin, which has anti-inflammatory effects, is reduced in this scenario, creating synergistic effects with the elevation of leptin (8). Thus, MS and periodontal disease share chronic inflammation as their common point, which leads to a bidirectional causal relationship between the two (9).

Hormonal changes in a woman's life—such as pregnancy and menopause—can also lead to changes in oral health. In the case of pregnant women, about 50% experience changes in the oral flora and, consequently, gum diseases. If left untreated, this increases the risk of preterm birth and low birth weight by 7.5 times (4). Menopause, a physiological process marking the end of a woman's fertile phase, is retrospectively defined by a period of one year since the last menstruation in women over 40 years old. It is a phase of a woman's life characterized by biological and endocrine changes, mainly in sexual hormones such as estrogen. Systemically, the decline in this hormone can lead to bone loss, while in the oral cavity, it appears to affect the gums and salivary glands, regulating salivation. Therefore, during menopause, women experience an increase in oral affections such as burning mouth syndrome, painful mouth (stomatodynia), periodontitis (as estrogen also affects the cellular proliferation of the gingival epithelium), halitosis, trigeminal neuralgia, and other neurological issues (10). Bone diseases also contribute to oral affections by increasing susceptibility to pathogens and gum disease due to elevated bone resorption (4)

Thus, the current segregation between systemic and oral health results in a significant increase in healthcare costs, as there are several shared risk factors between these conditions. Ideally, integration should occur through the implementation of oral health surveillance and the strengthening of preventive dental services in primary healthcare. Additionally, breaking the barrier between medicine and dentistry with basic oral health training would enable more effective surveillance by medical professionals (11).

In this way, the aim of this study was to describe the epidemiological and clinical characteristics of patients treated at the Dental Clinic of the University Center for Excellence -Unex. The goal was to identify the most

prevalent diseases in the studied population, understand whether patients are receiving treatment for these conditions, assess the presence of family history for these diseases, and provide a description of the clinical and epidemiological profile of the individuals treated.

Method

This is a retrospective observational study. Initially, a literature review on the topic was conducted to provide theoretical support for the work to be carried out, followed by the development of the data collection instrument to be used in the research.

The research was conducted at the Dental Clinic of Unex in Feira de Santana, which provides free dental care and treatment to the underprivileged population. This study was submitted to the Research Ethics Committee of the Faculty of Technology and Sciences of Salvador and approved with approval number 4.619.178 and identification registration 43031921.4.0000.5032.

The inclusion criteria involve adult patients who sought the Dental Clinic for endodontic treatment, underwent screening, and were treated by undergraduate students of the University. The exclusion criteria involve adult patients who sought the Dental Clinic but did not undergo endodontic treatment.

The study was conducted through data collection from patient records by a single, previously trained data collector. Data related to the sociodemographic, clinical, and behavioral profiles of the participants were gathered. The data obtained from the patient records and clinical analysis were documented in a data collection instrument created for the research.

For the statistical analysis, the sample was initially characterized according to sociodemographic, clinical, and behavioral characteristics. Then, the general characteristics of the study population were described based on the most prevalent diseases, with Pearson's Chi-square test (χ^2) used to investigate differences between proportions ($p < 0.05$). These were documented in a data collection instrument created for the research.

Results

A total of 73 patients were included, with data referring to treatments performed from October 2020 to May 2024, collected from February to July 2024. No data was excluded. Of these records, 53.4% were female, 57.5% were under 44 years old, 61.6% were mixed-race/Black, and 43.8% were single (Table 1). The most frequent occupation was self-employed, with 16.4% (Table 2).

Table II. Sample Characterization

OCCUPATIONAL CHARACTERISTICS	ABSOLUTE FREQUENCY (N)	RELATIVE FREQUENCY (%)
UNEMPLOYED	4	5,5%
HOUSEWIFE	4	5,5%
SALARIED	7	9,6%
SELF-EMPLOYED	12	16,4%
RETIRED	2	2,7%

Source: own author.

* 44 medical records did not contain this information.

When analyzing systemic diseases in general, 30.1% of patients had one. Among these, 54.5% had heart diseases, 36.4% had endocrine diseases, 27.3% had respiratory diseases, 4.1% had digestive diseases, and 4.5% had renal diseases (Figure 1). The most common condition was systemic arterial hypertension (50%) (Figure 2).

Upon conducting the association analysis between patients with arterial hypertension and socioeconomic variables, a statistically significant association was observed between being 45 years or older and having hypertension (p-value < 0.001), between the female sex and hypertension (p-value < 0.001) and between being married and having hypertension (p-value < 0.001) (Table 3).

Additionally, 39.7% of the patients reported considering themselves anxious (Table I). Furthermore, when analyzing the main complaints of the patients, 42.5% complained of pain, 24.7% of sensitivity, 21.9% sought to undergo procedures, 20.5% had complaints related to self-esteem or aesthetics, 13.7% complained of fractures, and 6.8% sought routine care (Figure 2).

Table I. Distribution of patients according to epidemiological and clinical variables

VARIABLES	ABSOLUT FREQUENCY (N)	RELATIVE FREQUENCY (%)
GENDER		
FEMALE	39	53,4%
MALE	34	46,6%
AGE GROUP*		
AGED 24 YEARS OR YOUNGER	6	8,2%
AGED 25 TO 44 YEARS	36	49,3%
AGED 45 TO 64 YEARS	26	35,6%
AGED 65 YEARS OR OLDER	3	4,1%
RACE/COLOR**		
MIXED-RACE/BLACK	45	61,6%
WHITE	6	8,2%
MARITAL STATUS***		
SINGLE	32	43,8%
MARIED	30	41,1%
SEPARATED/DIVORCED	4	5,5%
SISTEMIC DISEASES		
Yes	22	30,1%
No	51	69,9%
SYSTEMIC ARTERIAL HYPERTENSION		
Yes	11	15,1%
No	62	84,9%
DIABETES MELLITUS		
Yes	4	5,5%
No	69	94,5%
MENTAL STATE: Consider themselves nervous		
Yes	29	39,7%
No	44	60,3%

Source: own author.

* 2 medical records did not contain this information.

** 22 medical records did not contain this information.

*** 7 medical records did not contain this information.

Table 3- Association analysis of the variables.

	SYSTEMIC ARTERIAL HYPERTENSION		Total	p-value
	Yes	No		
Age				
Aged 44 years or younger	20	10	30	
Aged 45 years or older	42	1	43	< 0,001
Gender				
Male	31	3	34	< 0,001
Female	31	8	39	
Marital status				
No married	24	7	31	
Married	38	4	42	< 0,001

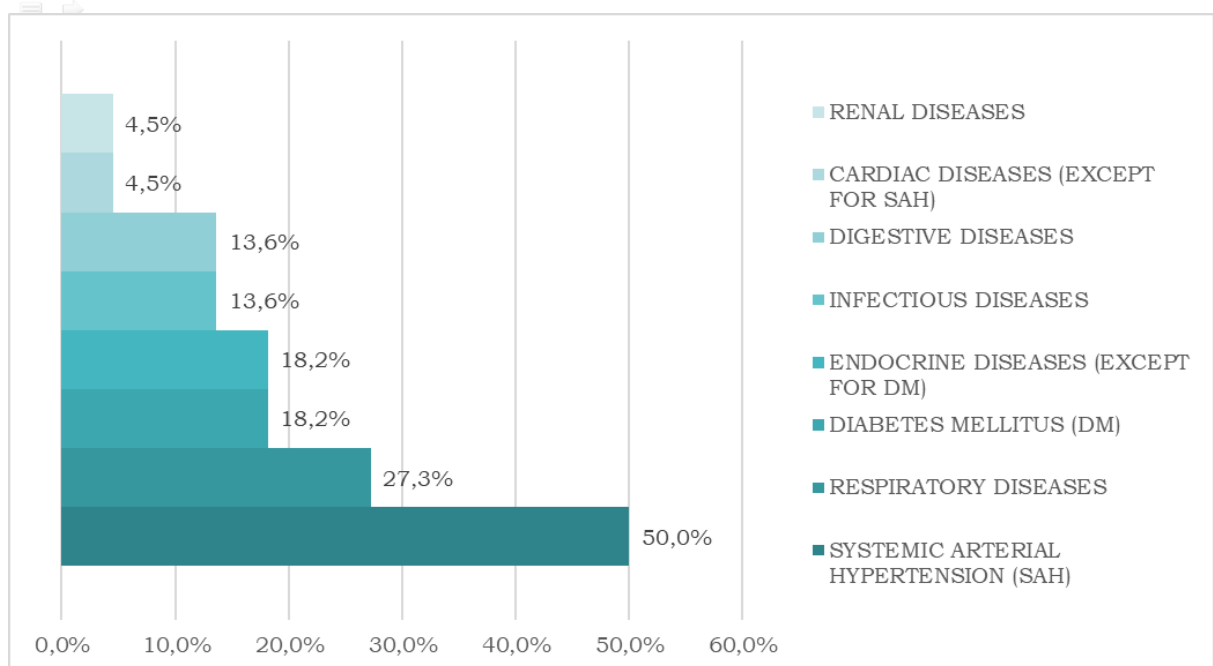


Figure 1-Distribution of Systemic Diseases Found in the Study Considering Their Percentage Values (%)*

* According to collected medical history

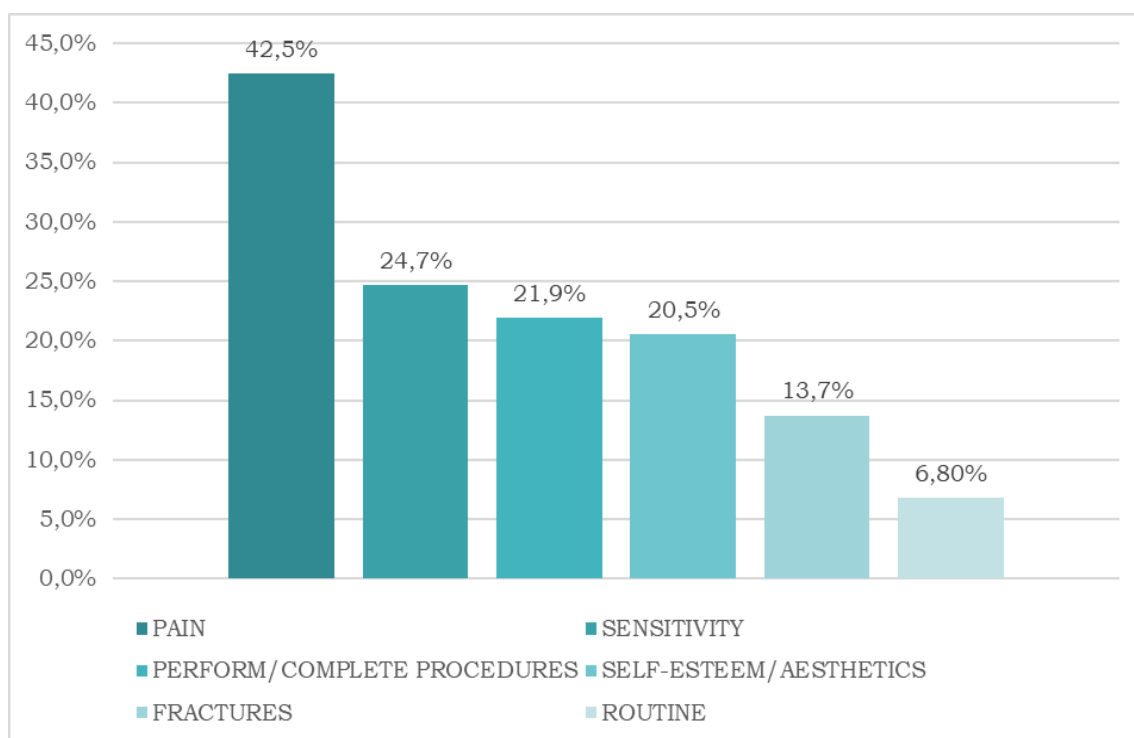


Figure 2- Distribution of main complaints found in the study considering their percentage values (%).

* 2 medical records did not contain this information.

Discussion

In our study, the overall prevalence of systemic diseases was low, which may be explained by the age of the patients evaluated. Among the 30.1% of patients with systemic diseases, cardiovascular diseases had the highest prevalence (54.5%), within them systemic arterial hypertension (SAH) was particularly predominant (91.7%). Cardiovascular diseases were followed by endocrine diseases (36.4%), half of which were cases of diabetes mellitus. Additionally, 27.3% had respiratory diseases, while 13.6% had infectious diseases. Another 13.6% had digestive diseases, and finally, 4.5% had renal diseases.

This finding differs from the literature, where cardiovascular diseases—specifically atherosclerotic disease—are found to have the second highest prevalence, with several authors (4,7,12) highlighting the common pathophysiology between atherosclerotic disease and periodontitis. The prevalence of systemic arterial hypertension (SAH) in the results of this study may be explained by the high comorbidity association between SAH and atherosclerotic disease (13). This is especially true considering that atherosclerotic disease is more difficult to identify through pathological history questionnaires.

Still, when considering the findings related to cardiovascular diseases, the variability between studies stands out and calls for stronger scientific evidence, using longitudinal studies and control of risk factors, in addition to randomized clinical trials of periodontal treatment. Once periodontal disease is confirmed as an independent risk factor for cardiovascular diseases, dental treatment becomes essential for patients at cardiovascular risk (14).

Endocrine alterations were the second most reported systemic changes in the study, with half of them in the form of Diabetes Mellitus (DM). This association is predominant in the literature, with several authors (4,7,12,15,16,17,18) pointing out a bidirectional relationship between DM and periodontitis. However, the benefit of periodontal treatment in the metabolic control of diabetes remains controversial, which calls for longitudinal studies with larger sample sizes (14). In this context, Glurich, Nycz, and Acharya (15) emphasize the importance of integrated medical-dental treatment for diabetes, through the inclusion of dental providers in primary care and a greater focus on oral health in guidelines and recommendations.

Respiratory diseases were reported in the present study, but they have limited presence in the literature, with Akl (4) suggesting that current evidence tends to point to a unidirectional relationship between oral bacterial aspiration and respiratory disease.

Infectious, renal, and digestive diseases—counted in this study—did not have documented associations with oral diseases in the reviewed literature. Metabolic syndrome and its components—obesity, dyslipidemia, and DM—are strongly linked to periodontitis by various authors (1,8,9,19). However, these were not accounted for in the present study due to the absence of vital data such as BMI and lipid profile.

In the epidemiological context, when conducting the association analysis, the present study observed a statistically significant association between being 45 years or older and having hypertension (p-value < 0.001). These findings are supported by Filho (20), who report a significant increase in hospitalizations due to hypertension starting at the age of 40. On the other hand, several other studies (21,22,23,24) indicate a significant prevalence beginning at the age of 60. Furthermore, this study also found a higher prevalence among females with a statistically significant association between the female sex and hypertension (p-value < 0.001), which was consistently corroborated (20,21,22,23). Additionally, a statistically significant association was found between married individuals and hypertension (p-value < 0.001); however, this finding was not present in the analyzed literature. Lastly, a significant prevalence of mixed-race/Black individuals among those affected by hypertension was also observed, a finding that aligns with the results reported by Dantas (21).

Final Considerations

This study aimed to analyze the epidemiological and clinical profile of patients treated at a dental school clinic, highlighting the relevance of systemic conditions and their relationship with oral health. Thus, we found a low prevalence of systemic diseases in the population attended, but among the diseases identified, cardiovascular diseases, particularly SAH, were predominant. Additionally, a statistically significant association was observed between being 45 years or older and presenting SAH. Although the findings are relevant, this study has limitations such as the retrospective methodology and the limited sample from a single healthcare unit, making it impossible to generalize its findings. Future research could expand the study to different populations and locations, including additional clinical variables—such as BMI, pre- and post-treatment glucose levels, and lipid profile—to allow for a deeper evaluation of the interaction between systemic and oral health. In summary,

this study contributes to highlighting the need for a joint and collaborative approach between medical and dental professionals in patient health care

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