Prevalence of Patients with Comorbidities at the Undergraduate Clinic of Piracicaba Dental School – Brazil

Prevalência de Pacientes com Comorbidades na Clínica de Graduação da Faculdade de Odontologia de Piracicaba – Brasil
Prevalencia de Pacientes con Comorbilidades en la Clínica de Pregrado de la Facultad de Odontología de Piracicaba – Brasil

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Abstract
Objectives: The aim of this study was to evaluate the prevalence of comorbidities in patients treated at the FOP-UNICAMP undergraduate clinic. A survey based on patient records obtained between June 2021 and November 2022 was conducted. Comorbidities, such as hypertension, diabetes, and heart diseases, among others, were identified. Additionally, dental history, gender, and age were assessed. Methods: The data were analyzed using chi-square and Mann-Whitney tests. A total of 2.857 medical records were included in the study. Results: There were no significant differences (p=0.12) in the ages (median; 1st and 3rd quartiles) between females (49.6; 36.3 - 60.1 years) and males (50.4; 35 - 62.5 years). However, there was a significantly higher number of females (n=1716) compared to males (n=1141) (p<0.0001), and the majority of patients fell into the 35-65 years age group (n=1676). There was a higher proportion of females under medical treatment or with comorbidities, and these patients were older compared to others (p<0.0001). There were no significant differences (p>0.05) between genders in relation to cardiovascular diseases (M=116; F=170), hypertension (M=320; F=510), diabetes (M=153; F=225), or the combination of these diseases. Hypertension was the most prevalent condition (29.1%). The patients with these diseases were older (p<0.0001) compared to those without these conditions. Depression and/or anxiety were more common in females and older patients. Conclusions: In conclusion, there was a higher proportion of comorbidities in females, and age was higher in individuals with comorbidities.
Descriptors: Diabetes Mellitus; Hypertension; Heart Diseases; Endocrine System Diseases; Hematologic Diseases.

Resumo
Objetivos: O objetivo deste estudo foi avaliar a prevalência de comorbidades em pacientes atendidos no ambulatório de graduação da FOP-UNICAMP. Foi realizada uma pesquisa com base em prontuários de pacientes obtidos entre junho de 2021 e novembro de 2022. Foram identificadas comorbidades, como hipertensão, diabetes e doenças cardíacas, entre outras. Além disso, foram avaliados histórico odontológico, sexo e idade. Métodos: Os dados foram analisados pelos testes qui-quadrado e Mann-Whitney. Foram incluídos no estudo 2.857 prontuários. Resultados: Não houve diferenças significativas (p=0,12) nas idades (mediana; 1º e 3º quartis) entre o sexo feminino (49,6; 36,3 - 60,1 anos) e o masculino (50,4; 35 - 62,5 anos). No entanto, houve um número significativamente maior de mulheres (n=1.716) em comparação com homens (n=1.141) (p<0,0001), e a maioria dos pacientes se enquadrava na faixa etária de 35 a 65 anos (n=1.676). Houve maior proporção de mulheres em tratamento médico ou com comorbidades, e esses pacientes eram mais velhos em comparação aos demais (p<0,0001). Não houve diferenças significativas (p>0,05) entre os sexos em relação às doenças cardiovasculares (M=116; F=170), hipertensão (M=320; F=510), diabetes (M=153; F=225), ou a combinação dessas doenças. A hipertensão foi a condição mais prevalente (29,1%). Os pacientes com essas doenças eram mais velhos (p<0,0001) em comparação com aqueles sem essas condições. Depressão e/ou ansiedade foram mais comuns em mulheres e pacientes mais velhos. Conclusões: Conclui-se que houve maior proporção de comorbidades no sexo feminino e a idade foi maior nos indivíduos com comorbidades.
Descritores: Diabetes Mellitus; Hipertensão; Cardiopatias; Doenças do Sistema Endócrino; Doenças Hematológicas.

Resumen
Objetivos: El objetivo de este estudio fue evaluar la prevalencia de comorbilidades en pacientes atendidos en la clínica de pregrado de la FOP-UNICAMP. Se realizó una encuesta basada en registros de pacientes obtenidos entre junio de 2021 y noviembre de 2022. Se identificaron comorbilidades, como hipertensión, diabetes y enfermedades cardíacas, entre otras. Además, se evaluaron antecedentes dentales, sexo y edad. Métodos: Los datos se analizaron mediante pruebas de chi-cuadrado y Mann-Whitney. Se incluyeron en el estudio un total de 2.857 historias clínicas. Resultados: No hubo diferencias significativas (p=0,12) en las edades (mediana; 1er y 3er cuartil) entre mujeres (49,6; 36,3 - 60,1 años) y hombres (50,4; 35 - 62,5 años). Sin embargo, hubo un número significativamente mayor de mujeres (n=1716) en comparación con hombres (n=1141) (p<0,0001), y la mayoría de los pacientes pertenecían al grupo de edad de 35 a 65 años (n=1676). Hubo mayor proporción de mujeres en tratamiento médico o con comorbilidades, y estos pacientes eran de mayor edad en comparación con otros (p<0,0001). No hubo diferencias significativas (p>0,05) entre géneros en relación con enfermedades cardiovasculares (M=116; F=170), hipertensión (M=320; F=510), diabetes (M=153; F=225) o la combinación de estas enfermedades. La hipertensión fue la condición más prevalente (29,1%). Los pacientes con estas enfermedades eran de mayor edad (p<0,0001) en comparación con aquellos sin estas condiciones. La depresión y/o la ansiedad fueron más comunes en mujeres y pacientes de mayor edad. Conclusiones: En conclusión, hubo mayor proporción de comorbilidades en el sexo femenino y la edad fue mayor en los individuos con comorbilidades.
Descriptores: Diabetes Mellitus; Hipertensión; Cardiopatías; Enfermedades del Sistema Endocrino; Enfermedades Hematológicas.

INTRODUCTION

Many patients who seek dental care have comorbidities, which cause significant concern and uncertainty among dentists. Over the past few decades, life expectancy has noticeably risen[1]. As the population ages, a larger number of individuals are now in the middle and older age groups, leading to an increase in the prevalence of chronic long-

term conditions such as cardiovascular disease, cancer, chronic respiratory disease, type 2 diabetes, as well as oral conditions like tooth decay, periodontal disease, tooth loss, and other oral conditions[2].

Periodontitis is a chronic inflammatory disease that progressively affects the supporting tissues of the teeth and is epidemiologically linked to various chronic diseases, including cardiovascular disease, type 2 diabetes mellitus, rheumatoid arthritis, inflammatory bowel disease, Alzheimer's disease, non-alcoholic fatty liver disease, and certain types of cancer[3].

Among cardiovascular diseases, hypertension is the leading cause of death worldwide. In most countries, over 50% of elderly individuals are affected by hypertension, and successful antihypertensive therapy reduces the risk of stroke, cardiovascular events, and heart failure[4].

Systemic arterial hypertension represents a significant health problem, not only due to its high prevalence in the world population, currently estimated at around 26% in adults, but it is also projected to increase further by 2025, reaching 29%[5]. Diseases like systemic arterial hypertension are associated with vascular changes mediated by factors that respond to oxygen, leading to vascular remodeling, inflammation, and changes in vascular tone[6]. In most countries, over 50% of elderly individuals are affected by hypertension, and successful antihypertensive therapy reduces the risk of stroke, cardiovascular events, and heart failure[4].

Furthermore, hypertension, cardiovascular disease, and oral and dental conditions resulting from poor oral health are prevalent among various population groups, particularly the elderly[7]. Cardiovascular disease is strongly associated with periodontitis independently, and effective control of periodontitis can significantly improve endothelial function, potentially benefiting cardiovascular health. Hypertension is among the cardiovascular diseases, and diabetes is among the endocrine diseases strongly linked to this association[8].

Diabetes mellitus (DM) is a chronic non-communicable disease characterized by elevated blood glucose levels, which can have detrimental effects on target organs such as the heart, blood vessels, eyes, kidneys, and nerves. It is currently the fastest growing disease worldwide and poses a significant threat to human health[9].

Existing treatments have been unable to halt the progressive nature of the disease and prevent the development of chronic diabetes and its complications. Type 1 diabetes mellitus is caused by the loss of beta cells in the pancreas, and its etiology is autoimmune, resulting in insufficient insulin production. Type 2 diabetes mellitus, on the other hand, is primarily characterized by insulin resistance, where cells do not respond adequately to normal levels of insulin signaling, combined with beta cell failure to provide a compensatory increase in insulin. 75-85% of patients are classified as having type 2 diabetes with insulin resistance[9,10].

Diabetes negatively affects several aspects of oral and dermal wound healing. In oral wounds that require substantial connective tissue for repair, diabetes induces deterioration of various cell types such as gingival fibroblasts, endothelial cells, and leukocytes through persistent inflammation and cell apoptosis[10]. Diabetes mellitus and periodontal disease are closely linked with interactions in both directions, and periodontal treatment can be beneficial for glycemic control and reduce the risk of complications[11].

Oral health and systemic health are closely linked, as diabetes mellitus may be accompanied by certain oral pathologies or trigger the development and progression of oral diseases. Patients with poor oral health, especially in the case of periodontal diseases such as gingivitis and periodontitis, can influence systemic diseases such as diabetes mellitus and coronary heart disease[12].

Therefore, knowing the patient's profile is essential for safe dental care. The objective of this study is to determine the prevalence of the most commonly associated comorbidities through patient interviews at the Faculty of Dentistry of Piracicaba, with the intention of establishing results that can help in the development of safer protocols for patient care.

MATERIAL AND METHOD

Study design and sample

The sample for this retrospective study consisted of 2857 medical records obtained from the data system of the Graduation Clinic of the Piracicaba School of Dentistry - UNICAMP. The records included patients who were seen between June 2021 and November 2022, of both sexes, aged 18 years or older and under 80 years old, and who had at least one of the following comorbidities: Diabetes mellitus, high blood pressure, heart diseases, endocrine diseases, blood diseases, and respiratory diseases.

This study received approval from the Research Ethics Committee of the Center for Dental Research and Faculty of Dentistry Piracicaba UNICAMP (CAAE: 63939322.3.0000.5418) and was conducted in accordance with the Consolidated Opinion of the Ethics Committee (CEP: 4.666.525).

Statistical analysis

The results were analyzed quantitatively using descriptive statistics. The distribution of patients was assessed based on the following variables: age, sex, diabetes, hypertension, heart diseases, endocrine diseases, blood diseases, and

respiratory diseases. Frequencies were compared between sexes using the chi-square test or Fisher's exact test. Age comparisons were made using the Mann-Whitney test. All statistical tests were conducted at a significance level of 5% using the BioEstat 5.0 software for statistical analyses.

RESULTS

Out of the initial 6846 records, repetitions and incomplete records were excluded, resulting in 3563 records. Subsequently, records of patients under 18 or over 80 years of age were further excluded, leaving a total of 2857 records of patients who were or had been treated between June 2021 and November 2022.

Table 1 presents the profile of the analyzed medical records based on the age and sex of the patients. There were no statistically significant differences (p=0.12) in the ages (median, 1st and 3rd quartiles) between females (49.6, 36.3 – 60.1 years) and males (50.4, 35 – 62.5 years). However, there was a significant (p<0.0001) higher proportion of females than males in the sample. Additionally, the majority of patients fell within the 35 to 65-year age range. The primary complaint of the patients, in relation to age and sex, is presented in Figure 1. It can be observed from Figure 1 that the complaint profile was very similar for patients of both sexes. Pain and surgical needs were the most common complaints among younger patients, while prosthetic/rehabilitation needs were more prevalent in older patients.

Table 1. Age range and sex of patients in the sample.

Age range (Years)	Sex		Total
	Female	Male	
18 a 24	145 (8.4%)	117 (10.3%)	262 (9.2%)
> 24 a 35	253 (14.7%)	168 (14.7%)	421 (14.7%)
> 35 a 45	297 (17.3%)	170 (14.9%)	467 (16.3%)
> 45 a 55	383 (22.3%)	221 (19.4%)	604 (21.1%)
> 55 a 65	373 (21.7%)	232 (20.3%)	605 (21.2%)
> 65 a 75	220 (12.8%)	183 (16%)	403 (14.1%)
> 75 a 80	45 (2.6%)	50 (4.4%)	95 (3.3%)
Total	**1716 (100%)**	**1141 (100%)**	**2857 (100%)**

Table 2 presents the influence of sex on the distribution of the sample based on questions found in the clinical records, including harmful habits, comorbidity presence, stress, insomnia, and teeth clenching. The analysis revealed a significant (p<0.0001) higher proportion of females undergoing medical treatment, reporting some form of morbidity (whether currently under treatment or not), experiencing higher levels of stress, suffering from insomnia, and exhibiting a higher prevalence of teeth clenching. On the other hand, male patients represented a greater proportion among those who smoked, used drugs, and consumed alcohol.

Table 2. Influence of sex on the distribution of responses to questions about harmful habits, presence of comorbidity, stress, insomnia and teeth clenching.

	Sex		Total (n=2857)	p
	Female (n=1716)	Male (n=1141)		
Are you under medical treatment?				
No	741 (43.2%)	583 (51.1%)	1324 (46.3%)	p<0.0001
Yes	975 (56.8%)	558 (48.9%)	1533 (53.7%)	
Reports morbidity or systemic condition				
No	605 (35.3%)	501 (43.9%)	1106 (38.7%)	p<0.0001
Yes	1111 (64.7%)	640 (56.1%)	1751 (61.3%)	
Do you smoke?				
No	1485 (86.5%)	899 (78.8%)	2384 (83.4%)	p<0.0001
Yes	231 (13.5%)	242 (21.2%)	473 (16.6%)	
Do you consume alcohol?				
No	1204 (70.2%)	612 (53.6%)	1816 (63.6%)	p<0.0001
Yes	512 (29.8%)	529 (46.4%)	1041 (36.4%)	
Do you use illicit drugs?				
No	1693 (98.7%)	1085 (95.1%)	2778 (97.2%)	p<0.0001
Yes	23 (1.3%)	56 (4.9%)	79 (2.8%)	
Are you stressed?				
No	1266 (73.8%)	949 (83.2%)	2215 (77.5%)	p<0.0001
Yes	450 (26.2%)	192 (16.8%)	642 (22.5%)	
Do you have insomnia?				
No	1261 (73.5%)	964 (84.5%)	2225 (77.9%)	p<0.0001
Yes	455 (26.5%)	177 (15.5%)	632 (22.1%)	
Do you grind or clench your teeth?				
No	1182 (68.9%)	916 (80.3%)	2098 (73.4%)	p<0.0001
Yes	534 (31.1%)	225 (19.7%)	759 (26.6%)	

Figure 2 indicates that there were no statistically significant differences in age among individuals who reported being stressed (p=0.99) or experiencing teeth clenching (p=0.78).
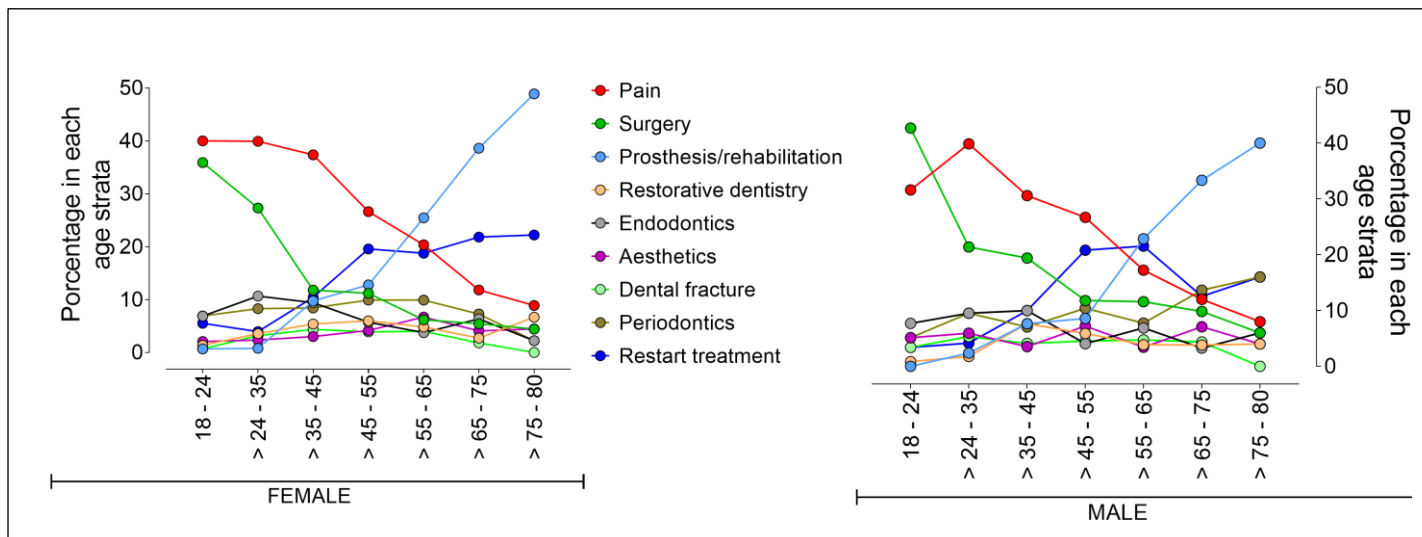

Figure 1: Main complaint of patients according to age and sex.

However, individuals who were undergoing medical treatment, had comorbidities, or suffered from insomnia exhibited significantly higher ages (p<0.0001) compared to those without these conditions.

On the other hand, individuals who reported being smokers, drug users, or alcohol consumers were younger (p<0.0001) in comparison to those who did not report engaging in these behaviors.
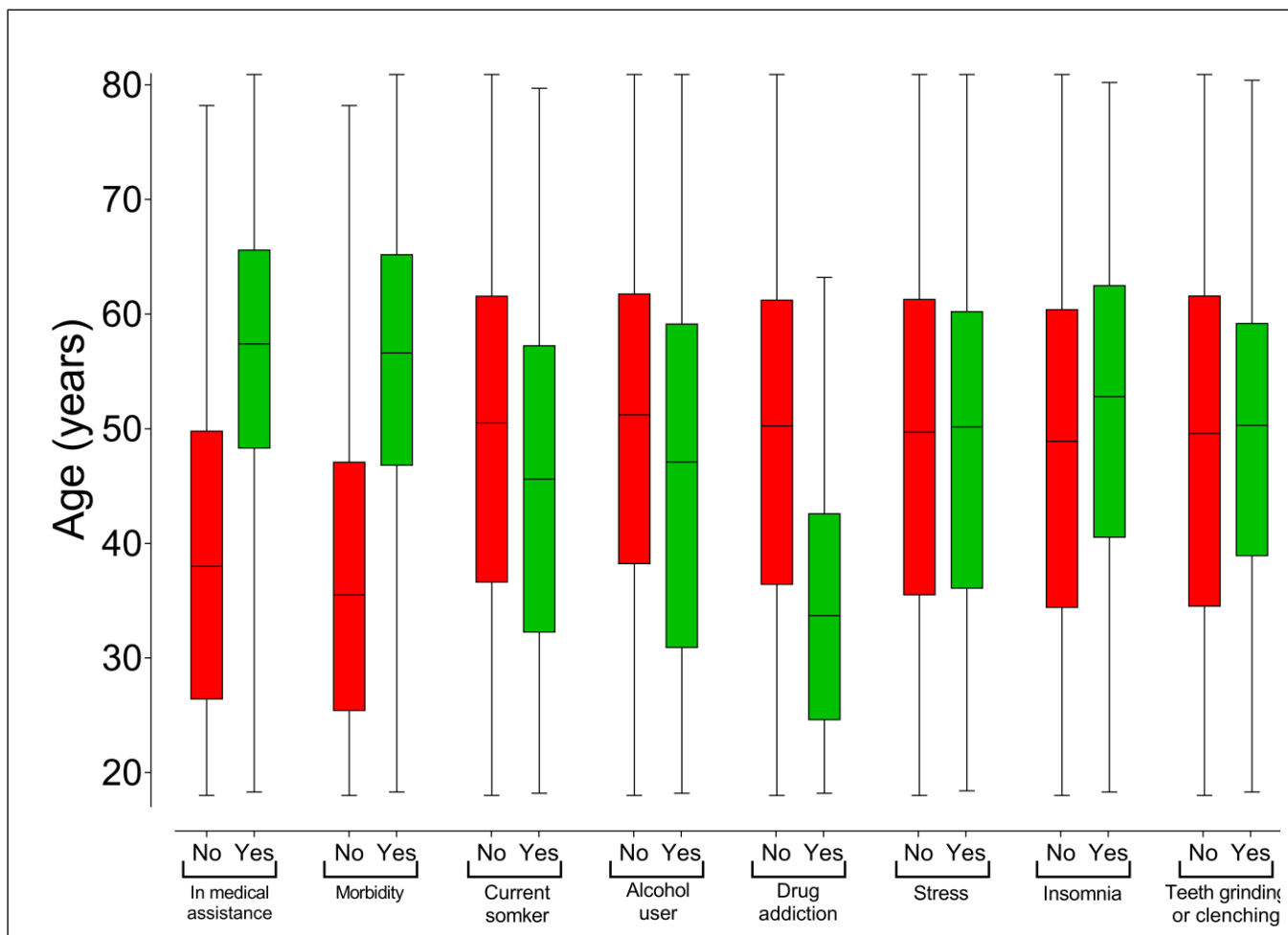

Figure 2: Age of patients based on responses regarding harmful habits, presence of comorbidity, stress, insomnia, and teeth clenching. Centerline=median; Box=1st and 3rd quartiles; Whiskers=maximum and minimum values.

Table 3 presents the influence of sex on the distribution of the sample in relation to questions related to cardiocirculatory diseases, hypertension, and diabetes, as well as their combinations. Figure 3 displays the age of the patients based on the presence of these same pathologies.

According to Table 3, there were no statistically significant differences (p>0.05) between the sexes regarding any of the mentioned pathologies or their combinations. Among them, hypertension was the most prevalent disease, affecting nearly 30% of the sample.

Figure 3 illustrates that, for all diseases or their combinations, the age of the patients was significantly higher (p<0.0001) in those individuals who presented the respective condition.

Table 4 displays the influence of sex on the distribution of the sample regarding other pathologies with low frequency (between 1 and 5%).

Table 3. Influence of sex on the distribution of cardiocirculatory diseases (cardiopathies, hypercholesterolemia, stroke, etc.), hypertension, and diabetes, as well as their combination.

|		Sex		Total (n=2857)	p
		Female (n=1716)	**Male (n=1141)**		
		Cardiocirculatory			
No		1546 (90.1%)	1025 (89.8%)	2571 (90%)	0.87
Yes		170 (9.9%)	116 (10.2%)	286 (10%)	
		Hypertension			
No		1206 (70.3%)	821 (72%)	2027 (70.9%)	0.36
Yes		510 (29.7%)	320 (28%)	830 (29.1%)	
		Diabetes			
No		1491 (86.9%)	988 (86.6%)	2479 (86.8%)	0.86
Yes		225 (13.1%)	153 (13.4%)	378 (13.2%)	
		Cardiopathy + hypertension + diabetes			
No		1686 (98.3%)	1116 (97.8%)	2802 (98.1%)	0.48
Yes		30 (1.7%)	25 (2.2%)	55 (1.9%)	
		Hypertension + diabetes			
No		1570 (91.5%)	1048 (91.8%)	2618 (91.6%)	0.79
Yes		146 (8.5%)	93 (8.2%)	239 (8.4%)	
		Cardiopathy +diabetes			
No		1673 (97.5%)	1110 (97.3%)	2783 (97.4%)	0.82
Yes		43 (2.5%)	31 (2.7%)	74 (2.6%)	
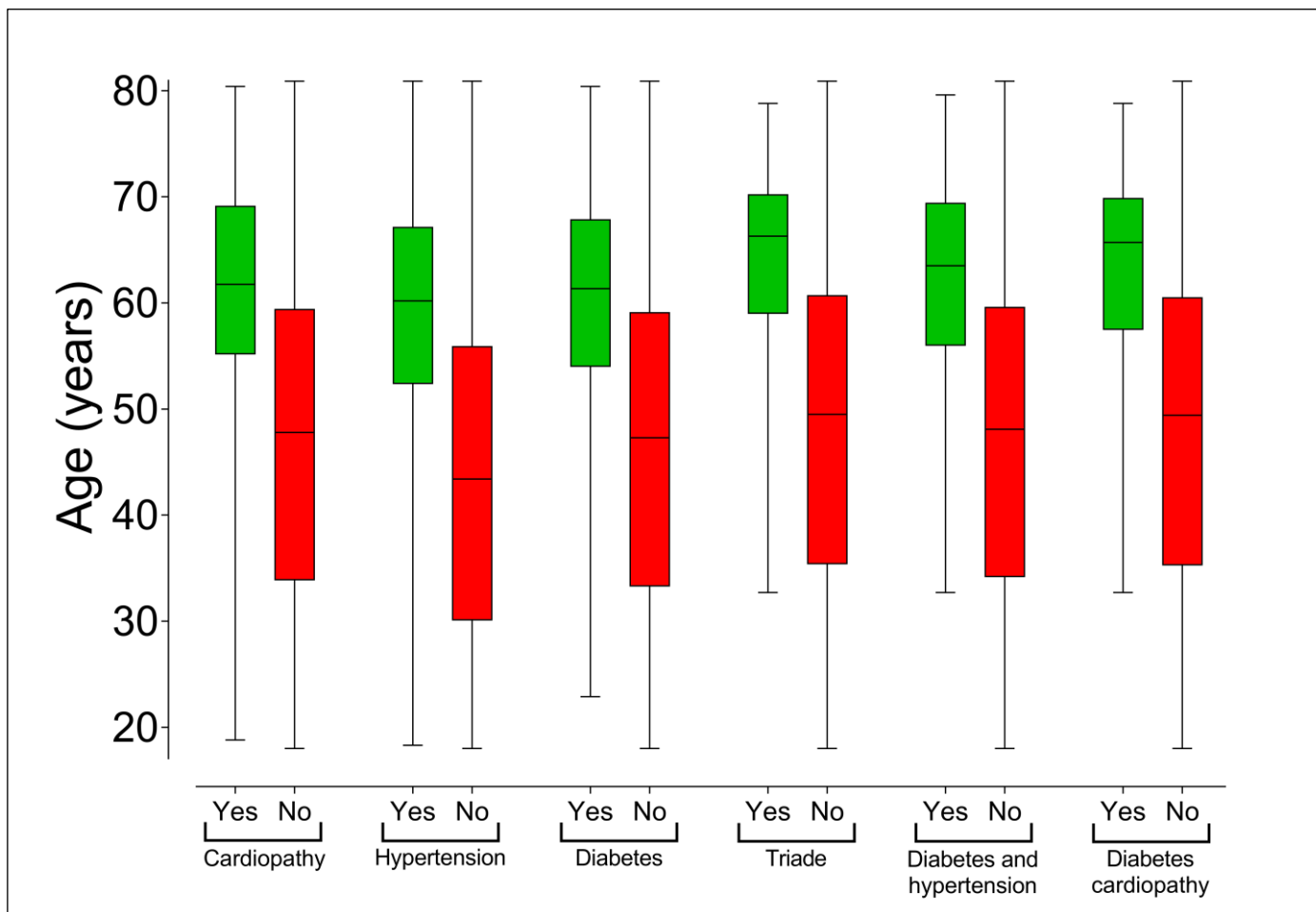
Figure 3: Age of patients in relation to cardiocirculatory diseases (cardiopathy, hypercholesterolemia, stroke, etc.), hypertension, and diabetes, including their combination. Centerline=median; Box=1st and 3rd quartiles; Whiskers=maximum and minimum values.

Table 4. Sex influence on the distribution of low-frequency diseases.

		Sex		Total (n=2857)	p
		Female (n=1716)	Male (n=1141)		
Orthopedic disorders					
No		1679 (97.8%)	1111 (97.4%)	2790 (97.7%)	0.49
Yes		37 (2.2%)	30 (2.6%)	67 (2.3%)	
Urological disorders					
No		1699 (99%)	1105 (96.8%)	2804 (98.1%)	p<0.0001
Yes		17 (1%)	36 (3.2%)	53 (1.9%)	
Hypothyroidism or hyperthyroidism					
No		1575 (91.8%)	1117 (97.9%)	2692 (94.2%)	p<0.0001
Yes		141 (8.2%)	24 (2.1%)	165 (5.8%)	
Gastrointestinal disorders					
No		1649 (96.1%)	1098 (96.2%)	2747 (96.1%)	0.93
Yes		67 (3.9%)	43 (3.8%)	110 (3.9%)	
Rheumatic disorders					
No		1607 (93.6%)	1118 (98%)	2725 (95.4%)	p<0.0001
Yes		109 (6.4%)	23 (2%)	132 (4.6%)	
Bronchitis/asthma					
No		1675 (97.6%)	1124 (98.5%)	2799 (98%)	0.13
Yes		41 (2.4%)	17 (1.5%)	58 (2%)	
Cancer					
No		1677 (97.7%)	1125 (98.6%)	2802 (98.1%)	0.13
Yes		39 (2.3%)	16 (1.4%)	55 (1.9%)	
Anemia					
No		1696 (98.8%)	1136 (99.6%)	2832 (99.1%)	0.0419
Yes		20 (1.2%)	5 (0.4%)	25 (0.9%)	

Table 5 presents the age of the patients based on the presence of these same pathologies. Among the observed orthopedic disorders were prostheses, injuries or pathologies in the cervical spine, neuropathies, fractures, and others.

There were no statistically significant differences between the sexes regarding these diseases. Similarly, there were no differences in gastrointestinal disorders, bronchitis or asthma, and cancer. Urological disorders (such as prostatic and renal disorders) and hypo/hyperthyroidism, as well as rheumatism (including systemic lupus, arthritis, gout, among others), were more prevalent (p<0.0001) in male patients, while anemia was more prevalent (p<0.05) in female patients. Table 5 reveals that, except for patients with bronchitis or asthma and anemia, the ages of patients with all other conditions were significantly higher than those without the listed diseases.

Table 6 demonstrates that CNS disorders differed between the sexes, with depression/anxiety being significantly more common in females. Both patients with anxiety and/or depression and those with other CNS diseases were significantly older than those without these conditions.

Table 7 displays the age of the patients according to the presence of these diseases.

Table 5. Age in relation to low-frequency diseases.

Age in years (median, 1st - 3rd quartiles)		p
Yes	No	
Orthopedic disorders		
55.9 (47.7 – 64.3)	49.7 (35.4 - 61.0)	0.0010
Urological disorders		
62.4 (54.0 - 67.5)	49.6 (35.5 - 60.8)	p<0.0001
Hypothyroidism or hyperthyroidism		
57.4 (49.1 - 64.8)	49.3 (34.9 - 60.8)	p<0.0001
Gastrointestinal disorders		
57.4 (46.7 - 65.8)	49.6 (35.3 - 60.8)	p<0.0001
Rheumatic disorders		
61.7 (54.6 - 69.0)	49.0 (35.0 - 60.3)	p<0.0001
Bronchitis/asthma		
49.4 (40.3 - 61.9)	49.8 (35.6 - 61.1)	0.75
Cancer		
60.6 (53.2 - 67.8)	49.6 (35.4 - 60.9)	p<0.0001
Anemia		
54.5 (46.1 - 58.9)	49.8 (35.6 - 61.1)	0.23

Table 6. Influence of sex on anxiety and/or depression and other central nervous system (CNS) diseases.

	Sex		Total (n=2857)	p
	Female (n=1716)	Male (n=1141)		
Psychiatric/CNS disorders				
No	1640 (95.6%)	1093 (95.8%)	2733 (95.7%)	0.85
Yes	76 (4.4%)	48 (4.2%)	124 (4.3%)	
Depression and/or anxiety				
No	1509 (87.9%)	1084 (95%)	2593 (90.8%)	p<0.0001
Yes	207 (12.1%)	56 (4.9%)	263 (9.2%)	

Table 7. Age in relation to anxiety and/or depression and other CNS disorders.

	Age in years (median, 1st - 3rd quartiles)		
	Yes	No	p
Psychiatric/CNS disorders	53.0 (41.0 – 66.7)	49.6 (35.3 - 61.0)	0.0019
Depression and/or anxiety	54.3 (44.4 - 61.9)	49.3 (34.7 - 60.9)	p<0.0001

DISCUSSION

Systemic comorbidities in dental patients are becoming more common, highlighting the need for thorough anamnesis and clinical examination. According to the World Health Organization (WHO), non-communicable diseases such as cardiovascular disease, diabetes mellitus, cancer, and chronic respiratory diseases account for approximately two-thirds of global deaths[11].

Data obtained during dental care demonstrate a correlation between cardiocirculatory and endocrine diseases (such as Diabetes Mellitus) and periodontal disease, serving as a warning sign to prevent potential complications in the treatment of these patients[13,14].

Assessing the systemic health of patients has become a consensus among dentists, as an increasing number of elderly individuals retain their natural dentition in old age[15]. Patients seeking dental care often present oral infections such as periodontal disease, and strong associations have been established with cardiovascular disease, diabetes, rheumatoid arthritis, and more recently, cognitive impairment[16].

The sample for this study consisted of 2,857 dental records, of which 1,751 (61.3%) showed systemic alterations. A study[17] reported a similar rate of 56% for systemic alterations, aligning with the findings of the present study. Lower rates were found among the central Indian population seeking oral surgery care, with the following rates of systemic diseases: cardiovascular disease (35.57%), metabolic disorders (20.35%), hematological disorders (12.84%), and infectious diseases (3.55%)[8,18].

The disparity between these studies and the present one may be due to the fact that the sample in this study comprises older patients, who are at a higher risk of developing oral and systemic diseases compared to other age groups. While oral diseases are mostly preventable, the rate of oral diseases in older adults tends to be higher[19].

No significant differences in age were observed between male and female patients. However, comorbidities were more prevalent in females, consistent with the findings of other studies[20,21]. The higher prevalence of systemic alterations in females may be attributed to their increased health awareness and higher utilization of medical and dental care.[20]

A higher prevalence of comorbidities in males was found in patients undergoing endodontic treatment[22] and periodontal treatment[23], likely due to the inclusion of elderly patients.

The majority of patients with diseases, regardless of sex, were between 35 and 65 years old, consistent with other studies that reported a prevalence of morbidities in the age group of 31 to 50 years[11,17,24]. The most prevalent age group among male patients with diseases in another study[17] was between 30 and 39 years old, accounting for 18.2% of the records. On the other hand, patients aged between 65 and 69 years old had the lowest prevalence, accounting for only 3.2% of the records. The main complaint among patients seeking dental care was dental pain (69.1%), with a higher occurrence in the age range of 30 to 59 years, which may explain the age distribution in the present study[25].

A significant association was observed in women between the ages of 20 and 40, with various comorbidities including headaches, hypermobility syndromes, fibromyalgia, anxiety/depression, and sleep disorders[26]. Sex differences in the prevalence of comorbidities and disorders among smokers, alcohol, and drug users were greater in males, and the mean age of these individuals was lower[27].

Although the proportion of females was higher in the medical records, there was no significant difference between the sexes regarding cardiocirculatory diseases (cardiopathies, hypercholesterolemia, stroke, etc.), hypertension, and diabetes, as well as their combinations (cardiopathy + diabetes + hypertension, diabetes + hypertension, and diabetes + heart disease). Among cardiocirculatory diseases, hypercholesterolemia is known as an important risk factor for the occurrence of hypertension[28].

Among the most prevalent systemic alterations, hypertension and diabetes were the most common and did not differ between sexes. A study conducted in the State of São Paulo, Brazil, revealed high prevalence rates of hypertension (78.8%), dyslipidemia (76.6%), and type II diabetes mellitus (71.1%) among the morbidities observed in community clinics[28].

The incidence of these pathologies increases with age. In the present study, the sample predominantly consisted of individuals between 55 and 69 years old, while Fonseca et al.[28] reported an average age of 59.2 years, with 53.7% being 60 years old or older. Heart failure, with an estimated prevalence of up to 10% in individuals aged 70 years or older, is a disease of pandemic nature[23].

In the present study, hypertension was the most prevalent disease, affecting almost 30% of the sample. Fernández-Feijoo et al.[29] found a similar percentage of individuals with hypertension (29%) in an age range mainly over 40 years. There is evidence that the state of periodontal health can make individuals more susceptible to the development of comorbidities, with hypertension being the most prevalent in a young population (mean age 52.5 years) with periodontal disease, predominantly in males (38.9% were hypertensive).[23] Dental surgeons can play an important role in the early diagnosis of hypertension by measuring the blood pressure of their patients, especially those over 40 years of age[29].

Among other pathologies evaluated, rheumatism (rheumatoid arthritis, systemic lupus erythematosus, and rheumatic fever) showed a higher proportion in females, particularly in the age group between 54.6 and 69 years. The majority of the study population with rheumatoid arthritis were women (94.1%), with a mean age of 53.5 years. Rheumatoid arthritis is described as an autoimmune disease that predominantly affects women in their fourth to sixth decades of life, although cases can occur in all age groups[30].

The data from the present study align with the epidemiological data of autoimmune diseases. A study conducted in Brazil in 2012 reported that 87.8% of the participants with autoimmune diseases were women aged between 40 and 60 years.[31]. In another study, rheumatic fever had a higher incidence in females aged 45-49 years[20]. Antibiotic prophylaxis is recommended for high-risk individuals with rheumatic fever undergoing dental surgical procedures, following the recommendations of the American Heart Association[32]. Systemic lupus erythematosus, in the same age group, showed a prevalence of approximately 90% in women, with the majority using multiple immunosuppressants[33].

Anemia had a low prevalence and predominance in females compared to males,

consistent with other studies[8,20]. Anemia is considered a contributing factor to the higher incidence of post-endodontic pain in females[34]. Dental infections in patients with anemia can lead to complications, significantly increasing the likelihood of hospital admission among adult patients[35]. Patients with anemia are more frequently admitted to emergency hospital care and may require hospitalization. The incidence of oral and dental problems in patients with anemia is higher compared to many other disorders[36,37].

Depression is a disease with a wide and heterogeneous diagnosis characterized by the absence of depressed mood and/or loss of pleasure in daily activities. It can be distressing and disabling, and it is one of the leading causes of disease-related disability in women, with a prevalence almost twice as high compared to men. Depression is associated with multiple medical conditions and may be a risk factor for cardiovascular disease and diabetes, worsening their symptoms[38].

The present study found a prevalence of anxiety and depression almost three times higher in females compared to males. In the general population, anxiety disorders are among the most prevalent mental disorders during adolescence[39]. In our study, the age group most affected by anxiety and depression was between 44.4 and 61.9 years. The prevalence of depression in patients aged ≥65 years can reach 40% in hospitalized patients and nursing homes, and 8 to 15% in community settings[40].

Patients with systemic diseases such as high blood pressure, diabetes, and heart disease are prone to experiencing more serious complications during dental care. Surgical interventions require extra care regarding local anesthetics and managing controlled underlying diseases to maintain levels close to normal. The present study revealed that hypertension and diabetes are more prevalent and can potentially interfere unfavorably with the clinical management of patients. Therefore, dental interventions performed by dental surgeons require a comprehensive patient history and a strong scientific knowledge to ensure safe and effective treatment.

CONCLUSION

The most common conditions observed in patients attending the undergraduate clinic at the Piracicaba Dental School FOP-UNICAMP were hypertension, diabetes, depression, and anxiety. Sex did not influence the prevalence of these diseases. In older age groups, these conditions were more prevalent. Other assessed diseases exhibited a higher frequency among females. Therefore, conducting a thorough anamnesis, with careful attention to the existing conditions in the patient, is crucial for determining an individualized treatment plan aimed at preserving the patient's overall health.

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CONFLICT OF INTERESTS

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