Research Article

Epidemiological Profile of the Pathologies of the Oral Cavity in a Peruvian Population: A 9-Year Retrospective Study of 18,639 Patients

Ángelo Sabogal,1 Jhonn Asencios,1 Ada Robles,2 Eloy Gamboa,2 José Rosas,2 Jorge Ríos,2 and Frank Mayta-Tovalino1,2,3

1School of Stomatology, Universidad Privada San Juan Bautista, Lima, Peru
2Professor of the Stomatology School, Universidad Privada San Juan Bautista, Lima, Peru
3Research Professor and Academic Coordinator of the Master of Public Health Degree, Universidad Privada San Juan Bautista (Head: Prof. Dr. Frank Mayta-Tovalino), Lima, Peru

Correspondence should be addressed to Frank Mayta-Tovalino; estadistico2.0@gmail.com

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Aim. To determine the epidemiological profile of oral diseases in a marginal urban Peruvian population. Methods. A 9-year retrospective study was conducted, analysing 18,639 clinical records from the María Auxiliadora Hospital between 2006 and 2015 with diagnoses of oral lesions using ICD-10 criteria. Clinical records were analysed for sex, tumour, periapical abscess and sinus, cysts of the oral region, other lesions of the oral mucosa and cavity, gingivitis and periodontal disease, dentofacial anomalies, diseases of pulp, etc. Results. Of 18,639 cases, the prevalence was higher in women for the following pathologies: unspecified dental caries (30.6%); impacted tooth in the category of disorders of tooth development and eruption (2.0%); pulpitis (6.8%) in the category of diseases of pulp and periapical tissues; temporomandibular joint (TMJ) disorders (1.5%) in the category of dentofacial anomalies; acute gingivitis (7.5%); radicular cyst (0.3%) in the category of cysts of the oral region; and periapical abscess without sinus (2.0%). Conclusions. We found a significant association between sex and different types of dental caries, disturbances in tooth eruption, diseases of pulp and periapical tissues, and dentofacial anomalies. The study also shows a statistically significant association between sex and gingivitis, periodontal disease, and periodontal abscess and sinus.

1. Introduction

The jaws and maxillofacial region are affected by pathologies including lesions that vary in location, histopathogenesis, and aetiology involving bone and soft tissues, with manifestations requiring additional clinical examinations and where pharmacological treatments prevent or at least minimise extensive surgical procedures with mutilations [1]. Normal dentition develops from the dental lamina, which is sensitive to disturbances, and the enamel does not regenerate after injury. Multiple factors affect the development of teeth, resulting in different lesions with hypoplasia, dysplasia, hypomineralisation, etc. [2]. For instance, some lesions derive from the enamel organ, dental lamina or epithelial rests of Malassez, and remnants from odontogenic epithelium affecting teeth and periodontal tissues [3–5]. These lesions include dental caries, cysts, tumours, and infections, which are the diseases with the highest prevalence and the main reason for consultation in dentistry in the population. They are divided into lesions of odontogenic and nonodontogenic origin; these anomalies are genetically inherited while others are acquired such as tumours and cysts [6–8].

On the other hand, some lesions arise in the jaws, are not tooth-related, and have no aetiological or histopathogenetic relationship with the ectoderm, facial tissues, etc. These lesions appear as an inflammatory reaction or lesions of unknown aetiology, where lesions of the oral mucosa and cavity prevail; tumours and infections are also part of this group according to another study [9].
There are few studies that describe the most prevalent oral diseases in a Peruvian population, which has great genetic biodiversity in Latin America. Therefore, the objective of this research is important because this 9-year retrospective study examined the prevalence of oral lesions in a marginal urban Peruvian population.

2. Participants and Methods

2.1. Participants of the Study. A cross-sectional, retrospective, and observational study was conducted during the years 2006 to 2015. We identified 18,639 electronic clinical records which were evaluated from the Department of Dentistry of the María Auxiliadora Hospital in Lima (Peru), registering the patients examined and diagnosed with different types of oral lesions, to know what the regional prevalence was of these pathologies in the Peruvian inhabitants of scarce economic resources.

2.2. Procedure. Oral lesions were identified using ICD-10 criteria (International Statistical Classification of Diseases and Related Health Problems). Variables such as sex, caries, disorders of tooth development and eruption, other diseases of hard tissues of teeth, and diseases of pulp and periapical tissues were collected for oral lesions of hard tissues. Similarly, variables such as gingivitis, and periodontal disease, other lesions of the oral mucosa and cavity, cysts of the oral region, periodontal abscess and sinus, and tumours were taken for odontogenic and nonodontogenic lesions of soft tissues.

The procedure for this research followed Strengthening the Reporting of Observational studies in Epidemiology (STROBE) guidelines. In addition, it was authorised by the Ethics Committee of Universidad Privada San Juan Bautista (approval code CEPB-FCS 0006).

2.3. Statistical Analysis. For the statistical analysis, we used frequency measurements and the chi-square test, establishing a level of significance of p < 0.05. All statistical tests were performed with Stata software (version 12.0, USA).

3. Results

3.1. Study Population. Out of 18,639 electronic clinical records over 9 years, when evaluating the prevalence of oral lesions of hard tissues for the category of caries, 7,045 cases of unspecified dental caries (37.7%) were observed, followed by 1,221 cases of dentine caries (6.5%), being more common in females (30.6% and 3.8%, respectively). In addition, 125 cases of caries limited to enamel were found, among other pathologies, with a prevalence of <1% of the population. Regarding disorders of tooth development and eruption, there were 661 cases of impacted teeth (3.5%), being more common in females (2.0%); there were also 175 cases with disturbances in tooth eruption, 107 cases with disturbances in tooth formation, and other pathologies with a prevalence of <1% of the population. Regarding diseases of pulp and periapical tissues, there were 1,919 cases of pulpitis (10.2%), followed by 1,440 cases of retained dental root (7.7%) and 512 cases of pulp necrosis (2.7%), being more common in females (6.8%, 5.2%, and 1.4%, respectively), as well as other pathologies with a prevalence of <1% of the population.

In relation to dentofacial anomalies, there were 341 cases of TMJ disorders (1.8%), being more common in females (1.5%); additionally, there were 113 cases of malocclusion, 47 cases of tooth position anomalies, and other pathologies with a prevalence of <1% of the population. There was a statistically significant association between sex and these evaluated categories (p < 0.05). In the category of other diseases of hard tissues of teeth, there were 46 cases of other jaw diseases, 24 cases of deposits (accretions) on teeth, and other pathologies with a prevalence of <1% of the population. However, there was no statistically significant association between sex and this evaluated category (p > 0.05) (Tables 1 and 2).

3.2. Prevalence. When evaluating the prevalence of different oral pathologies of soft tissues, in the category of gingivitis and periodontal disease, there were 1,648 cases of acute gingivitis (8.8%), followed by 677 cases of chronic periodontitis (3.6%) and 417 cases of chronic gingivitis (2.2%), being more common in females (7.5%, 2.3%, and 1.6%, respectively), as well as other pathologies with a prevalence of <1% of the population. Regarding cysts of the oral region, there were 93 cases of radicular cyst, 37 cases of developmental odontogenic cysts, and other pathologies with a prevalence <1% of the population, being more common in females. With regard to periodontal abscess and sinus, there were 712 cases of periapical abscess without sinus (3.8%), being more common in females (2.0%), followed by 153 cases of cellulitis and mouth abscess and other pathologies with a prevalence of <1% of the population. There was a statistically significant association between these evaluated categories and sex (p < 0.05). In the category of other lesions of oral mucosa and cavity, there were 34 cases of other and unspecified lesions of the oral mucosa, in addition to other pathologies with a prevalence of <1% of the population. Similarly, in the category of tumours, there were only 3 cases of central giant cell granuloma, with a prevalence of <1% of the population. However, these two evaluated categories showed no statistically significant association with sex, p > 0.05 (Tables 3 and 4).

4. Discussion

Oral pathologies are reasons for consultation, and according to the WHO, biofilm is an ecosystem that causes odontogenic infections. Different authors consider these lesions the major and most common oral pathologies in all age groups, being a reason for professional intervention [6–8]. The available literature indicates that the misdiagnosis of these lesions results in various diseases such as periodontitis, osteitis, and other lesions; also, nonodontogenic lesions cause diseases such as mucosal and gland infections and tumours [6, 10, 11].

Out of a total of 18,639 electronic clinical records from a Peruvian hospital, this study showed 8,404 cases of caries (45.1%), of which 1,221 cases (37.7%) corresponded to unspecified dental caries, being more common in females.
| Diagnosis                                                                 | Abbrev. | No.  | %   |
|---------------------------------------------------------------------------|---------|------|-----|
| Caries                                                                     |         |      |     |
| Not present                                                               | NP      | 10235| 54.9|
| Dentine caries                                                             | CD      | 1221 | 6.5 |
| Caries limited to enamel                                                  | CLE     | 125  | 0.6 |
| Dental caries, unspecified                                                | DCU     | 7045 | 37.7|
| Arrested dental caries                                                    | ADC     | 8    | 0.0 |
| Other dental caries                                                        | ODC     | 3    | 0.0 |
| Caries in pits and fissures                                               | CPF     | 2    | 0.0 |
| Disorders of tooth development and eruption                               |         |      |     |
| Not present                                                               | NP      | 17444| 93.5|
| Embedded tooth                                                            | EmbT    | 82   | 0.4 |
| Impacted tooth                                                            | ImpT    | 661  | 3.5 |
| Teething syndrome                                                          | TS      | 51   | 0.2 |
| Disorders of tooth development, unspecified                               | DTDU    | 17   | 0.0 |
| Hereditary disturbances in tooth structure, not elsewhere classified      | HDTSTNEC| 9    | 0.0 |
| Disturbances in tooth eruption                                            | DTE     | 175  | 0.9 |
| Supernumerary tooth                                                       | SpnT    | 77   | 0.4 |
| Disturbances in tooth formation                                           | DTF     | 107  | 0.5 |
| Staining of teeth                                                         | ST      | 12   | 0.0 |
| Atrophy of edentulous alveolar ridge                                      | AEAR    | 4    | 0.0 |
| Other diseases of hard tissues of teeth                                   |         |      |     |
| Not present                                                               | NP      | 18476| 99.1|
| Excessive attrition of teeth                                              | EAT     | 10   | 0.0 |
| Hypercementosis                                                           | Hpcmt   | 12   | 0.0 |
| Deposits (accretions) on teeth                                            | DAT     | 24   | 0.1 |
| Certain disorders of gingiva and edentulous alveolar ridge                | CDGEAR  | 18   | 0.0 |
| Other diseases of jaws                                                    | ODJ     | 46   | 0.2 |
| Pathological resorption of teeth                                          | PRT     | 5    | 0.0 |
| Complete tooth loss                                                       | CLT     | 15   | 0.0 |
| Congenital absence of teeth                                               | CAT     | 8    | 0.0 |
| Exfoliation of teeth due to systemic causes                               | ETDSC   | 6    | 0.0 |
| Other specified disorders of teeth and supporting structures              | OSDTSS  | 19   | 0.1 |
| Diseases of pulp and periapical tissues                                  |         |      |     |
| Not present                                                               | NP      | 14631| 78.4|
| Pulpitis                                                                  | Plpts   | 1919 | 10.2|
| Necrosis of pulp                                                          | NOP     | 512  | 2.7 |
| Pulp degeneration                                                         | PD      | 17   | 0.0 |
| Acute apical periodontitis of pulpal origin                               | AAPPIO  | 32   | 0.1 |
| Abnormal hard tissue formation in pulp                                    | AHTFP   | 21   | 0.0 |
| Chronic apical periodontitis                                              | CAP     | 29   | 0.1 |
| Retained dental root                                                      | RDR     | 1440 | 7.7 |
| Other and unspecified diseases of pulp and periapical tissues             | OUDPPT  | 38   | 0.2 |
| Dentofacial anomalies                                                     |         |      |     |
| Not present                                                               | NP      | 18077| 96.9|
| Malocclusion                                                              | Mlcs    | 113  | 0.0 |
| TMJ disorders                                                             | TMJD    | 341  | 1.8 |
| Anomalies of tooth position                                               | ATP     | 47   | 0.2 |
| Anomalies of jaw-cranial base relationship                                | AJCBR   | 15   | 0.0 |
| Major anomalies of jaw size                                               | MAJS    | 11   | 0.0 |
| Abnormalities of size and form of teeth                                   | ASFT    | 10   | 0.0 |
| Dentofacial functional abnormalities                                       | DclFA   | 4    | 0.0 |
| Anomalies of dental arch relationship                                     | ADAR    | 14   | 0.0 |
| Developmental disturbances of jaws                                        | DDJ     | 1    | 0.0 |

Table 1: Classification and distribution of oral lesions (hard tissues).
Table 2: Nine-year retrospective study of the prevalence of hard tissue lesions.

|                         | Female | Sexual  | Male  | Total  | p*  |
|-------------------------|--------|---------|-------|--------|-----|
|                         | N     | %       | n     | %      |     |
| Caries                  |       |         |       |        |     |
| NP                      | 6861  | 36.8    | 3374  | 17.9   | 10235 | 54.9 |
| CD                      | 722   | 3.8     | 499   | 2.6    | 1221  | 6.5  |
| CLE                     | 70    | 0.3     | 55    | 0.2    | 125   | 0.6  |
| DCU                     | 5711  | 30.6    | 1334  | 7.1    | 7045  | 37.7 |
| ADC                     | 6     | 0.0     | 2     | 0.0    | 8     | 0.0  |
| ODC                     | 2     | 0.0     | 0     | 0.0    | 2     | 0.0  |
| CPF                     | 1     | 0.0     | 1     | 0.0    | 2     | 0.0  |
| Disorders of tooth development and eruption |       |         |       |        |     |
| NP                      | 12708 | 68.1    | 4736  | 25.4   | 17444 | 93.5 |
| EmbT                    | 55    | 0.2     | 27    | 0.1    | 82    | 0.4  |
| ImpT                    | 391   | 2.0     | 270   | 1.4    | 661   | 3.5  |
| TS                      | 29    | 0.1     | 22    | 0.1    | 51    | 0.2  |
| DTU                     | 8     | 0.0     | 9     | 0.0    | 17    | 0.0  |
| HDTSNEC                 | 5     | 0.0     | 4     | 0.0    | 9     | 0.0  |
| DTE                     | 88    | 0.4     | 87    | 0.4    | 175   | 0.9  |
| SprT                    | 25    | 0.1     | 52    | 0.2    | 77    | 0.4  |
| DTF                     | 55    | 0.2     | 52    | 0.2    | 107   | 0.5  |
| ST                      | 8     | 0.0     | 4     | 0.0    | 12    | 0.0  |
| AEAR                    | 2     | 0.0     | 2     | 0.0    | 4     | 0.0  |
| Other diseases of hard tissues of teeth |       |         |       |        |     |
| NP                      | 13262 | 71.1    | 5214  | 27.9   | 18476 | 99.1 |
| EAT                     | 8     | 0.0     | 2     | 0.0    | 10    | 0.0  |
| Hpcmt                   | 11    | 0.0     | 1     | 0.0    | 12    | 0.0  |
| DAT                     | 11    | 0.0     | 13    | 0.0    | 24    | 0.1  |
| CDGEAR                  | 12    | 0.0     | 6     | 0.0    | 18    | 0.0  |
| ODJ                     | 31    | 0.1     | 15    | 0.0    | 46    | 0.2  |
| PRT                     | 4     | 0.0     | 1     | 0.0    | 5     | 0.0  |
| CLT                     | 10    | 0.0     | 5     | 0.0    | 15    | 0.0  |
| CAT                     | 7     | 0.0     | 1     | 0.0    | 8     | 0.0  |
| ETDSCE                  | 6     | 0.0     | 0     | 0.0    | 6     | 0.0  |
| OSDTSS                  | 13    | 0.0     | 6     | 0.0    | 19    | 0.1  |
| Diseases of pulp and periapical tissues |       |         |       |        |     |
| NP                      | 59    | 57.7    | 3872  | 20.7   | 14631 | 78.4 |
| Ptpts                   | 1269  | 6.8     | 650   | 3.4    | 1919  | 10.2 |
| NOP                     | 279   | 1.4     | 242   | 1.2    | 512   | 2.7  |
| PD                      | 15    | 0.0     | 2     | 0.0    | 17    | 0.0  |
| AAPPPO                  | 22    | 0.1     | 10    | 0.0    | 32    | 0.1  |
| AHTFP                   | 15    | 0.0     | 6     | 0.0    | 21    | 0.0  |
| CAP                     | 19    | 0.1     | 10    | 0.0    | 29    | 0.1  |
| RDR                     | 981   | 5.2     | 459   | 2.4    | 1440  | 7.7  |
| OUPPPT                  | 24    | 0.1     | 14    | 0.0    | 38    | 0.2  |
| Dentofacial anomalies   |       |         |       |        |     |
| NP                      | 12957 | 69.5    | 512   | 2.7    | 18077 | 96.9 |
| Mics                    | 67    | 0.3     | 46    | 0.2    | 113   | 0.0  |
| TMJD                    | 284   | 1.5     | 57    | 0.3    | 341   | 1.8  |
| ATP                     | 28    | 0.1     | 19    | 0.1    | 47    | 0.2  |
| AJCBR                   | 8     | 0.0     | 7     | 0.0    | 15    | 0.0  |
| MAJS                    | 8     | 0.0     | 3     | 0.0    | 11    | 0.0  |
| ASFT                    | 7     | 0.0     | 3     | 0.0    | 10    | 0.0  |
| DfIEA                   | 2     | 0.0     | 2     | 0.0    | 4     | 0.0  |
| ADAR                    | 10    | 0.0     | 4     | 0.0    | 14    | 0.0  |
| DDJ                     | 0     | 0.0     | 1     | 0.0    | 1     | 0.0  |
| DfIAU                   | 3     | 0.0     | 3     | 0.0    | 6     | 0.0  |

* Pearson chi-square test; significance level p < 0.05.
(30.6%), which is in agreement with the empirical evidence from studies in Germany and the USA, where there was a greater prevalence in females [12]. In another study [13], the prevalence of caries was 93.19% greater in females, with a sex ratio of 0.77. Previously, a high prevalence of caries (69%) was observed in university students in Hong Kong using the DMFT index, where female prevalence was higher than that of males like other studies [14, 15].

Regarding disorders of tooth development and eruption, there were 661 (3.5%) cases of an impacted tooth, being more common in women (n=391; 2.0%), with a male-to-female ratio of 1:1.3. This is similar to the results of a study in Turkey, where there were 1,117 cases (9.2%) with one or more impacted teeth and a male-to-female ratio of 1:1.4. However, these results contradict what was found in Tanzania, where a male-to-female ratio of 1.2:1 was recorded [16].

### Table 3: Classification and distribution of oral pathologies (soft tissues).

| Diagnosis                                                                 | Abbrev. | No.  | %     |
|--------------------------------------------------------------------------|---------|------|-------|
| Gingivitis and periodontal disease                                        |         |      |       |
| Not present                                                              | NP      | 15549| 83.4  |
| Acute gingivitis                                                         | AG      | 1648 | 8.8   |
| Chronic gingivitis                                                       | CG      | 417  | 2.2   |
| Acute periodontitis                                                      | AP      | 151  | 0.8   |
| Chronic periodontitis                                                    | CP      | 677  | 3.6   |
| Gingival enlargement                                                     | GE      | 73   | 0.3   |
| Periodontal disease, unspecified                                          | PDU     | 6    | 0.0   |
| Stomatitis                                                               | Stoma   | 31   | 0.1   |
| Mucocoele of salivary gland                                              | MSG     | 29   | 0.1   |
| Alveolitis                                                               | Alvits  | 52   | 0.2   |
| Periodontitis                                                            | Perio   | 6    | 0.0   |
| Other lesions of oral mucosa and cavity                                  |         |      |       |
| Not present                                                              | NP      | 18564| 99.5  |
| Leukoplaikia and other disturbances of oral epithelium, including tongue | LODOEIT | 9    | 0.0   |
| Other and unspecified lesions of oral mucosa                             | OULOM   | 34   | 0.1   |
| Sialadenitis                                                             | Sialo   | 4    | 0.0   |
| Oral submucous fibrosis                                                  | OSF     | 9    | 0.0   |
| Other diseases of lip and oral mucosa                                     | ODLOM   | 4    | 0.0   |
| Irritative hyperplasia of oral mucosa                                    | IHOM    | 2    | 0.0   |
| Hairy leukoplaikia                                                       | HL      | 2    | 0.0   |
| Gingival and edentulous alveolar ridge lesions associated with trauma    | GEARLAT | 4    | 0.0   |
| Granuloma and granuloma-like lesions of oral mucosa                      | GGLLLOM | 3    | 0.0   |
| Glossitis                                                                | Glos    | 4    | 0.0   |
| Cysts of the oral region                                                 |         |      |       |
| Not present                                                              | NP      | 18491| 99.2  |
| Radicular cyst                                                           | RC      | 93   | 0.4   |
| Developmental odontogenic cysts                                          | DOC     | 37   | 0.1   |
| Other cysts of the oral region, not elsewhere classified                 | OCORNEC | 3    | 0.0   |
| Other cysts of the jaw                                                    | OCJ     | 15   | 0.0   |
| Periapical abscess and sinus                                             |         |      |       |
| Not present                                                              | NP      | 17694| 94.9  |
| Periapical abscess with sinus                                            | PAWS    | 77   | 0.41  |
| Periapical abscess without sinus                                         |PAWtS    | 712  | 3.8   |
| Cellulitis and abscess of mouth                                          | CAM     | 153  | 0.8   |
| Cellulitis of face                                                       | CF      | 1    | 0.0   |
| Abscess of salivary gland                                                | ASG     | 2    | 0.0   |
| Tumour                                                                   |         |      |       |
| Not present                                                              | NP      | 18636| 99.9  |
| Giant cell granuloma, central                                            | GCGC    | 3    | 0.0   |
Table 4: Nine-year retrospective study of the prevalence of oral pathologies (soft tissues).

| Lesion Type                                      | Female % | Male % | Total % | p*  |
|-------------------------------------------------|----------|--------|---------|-----|
| **Gingivitis and periodontal disease**           |          |        |         |     |
| NP                                              | 11008    | 4541   | 15549   | 83.4 |
| AG                                              | 1401     | 247    | 1648    | 8.8  |
| CG                                              | 304      | 113    | 417     | 2.2  |
| AP                                              | 89       | 62     | 151     | 0.8  |
| CP                                              | 438      | 239    | 677     | 3.6  |
| GE                                              | 50       | 23     | 73      | 0.3  |
| PDU                                             | 3        | 3      | 6       | 0.0  |
| Stoma                                           | 19       | 12     | 31      | 0.1  |
| MSG                                             | 12       | 17     | 29      | 0.1  |
| Alvits                                          | 46       | 6      | 52      | 0.2  |
| Perio                                           | 3        | 3      | 6       | 0.0  |
| **Other lesions of oral mucosa and cavity**      |          |        |         |     |
| NP                                              | 13320    | 5235   | 18564   | 99.5 |
| LODOEIT                                         | 6        | 3      | 9       | 0.0  |
| OULOM                                           | 18       | 16     | 34      | 0.1  |
| Sialo                                           | 3        | 1      | 4       | 0.0  |
| OSF                                             | 5        | 4      | 9       | 0.0  |
| ODLOM                                           | 4        | 0      | 4       | 0.0  |
| IHOM                                            | 1        | 1      | 2       | 0.0  |
| HL                                              | 1        | 1      | 2       | 0.0  |
| GEARLAT                                         | 2        | 2      | 4       | 0.0  |
| GGLLOM                                          | 2        | 0      | 2       | 0.0  |
| Glos                                            | 2        | 0      | 2       | 0.0  |
| **Cysts of the oral region**                     |          |        |         |     |
| NP                                              | 13284    | 5207   | 18491   | 99.2 |
| RC                                              | 58       | 35     | 93      | 0.4  |
| DOC                                             | 21       | 16     | 37      | 0.1  |
| OCORNEC                                         | 2        | 1      | 3       | 0.0  |
| OCJ                                             | 9        | 6      | 15      | 0.0  |
| **Periapical abscess and sinus**                 |          |        |         |     |
| NP                                              | 12855    | 4839   | 17694   | 94.9 |
| PAWS                                            | 31       | 46     | 77      | 0.41 |
| PAWSIS                                          | 389      | 1.7    | 712     | 3.8  |
| CAM                                             | 97       | 56     | 153     | 0.8  |
| CF                                              | 1        | 0.0    | 1       | 0.0  |
| ASG                                             | 1        | 1      | 2       | 0.0  |
| **Tumour**                                      |          |        |         |     |
| NP                                              | 13372    | 5264   | 18636   | 99.9 |
| GCNC                                            | 1        | 2      | 3       | 0.0  |

* Pearson chi-square test; significance level p < 0.05.

With respect to diseases of pulp and periapical tissues, the most common lesion was pulpitis (10.2%), followed by retained dental root (7.7%), pulp necrosis (2.7%), and other pathologies, such as acute and chronic apical periodontitis, with a prevalence of <1% of the population, being more common in females for all conditions. This differs from a study of 4,209 emergency patients in a university hospital, where 2,058 suffered odontogenic infections: most (45.0%) had apical periodontitis, 20.8% had abscesses, 17.3% had marginal periodontitis, 16.3% had pulpitis, and 5.8% had pericoronitis, with men being more affected than women [17].

In relation to dentofacial anomalies, the most prevalent condition was a TMJ disorder (1.8%), being more common in females (1.5%), which was consistent with findings from Finland where 18.5% of 1,962 patients presented with a TMJ disorder, being more common in females [18]. Also, within this category, there was a higher prevalence of females with tooth position anomalies and abnormalities of the size and form of teeth, which is in agreement with a previous study where 1,172 radiographs of 581 men and 586 women were reviewed, finding abnormalities of form, position, and number with 213 teeth anomalies, being more common in women [8].
In the category of gingivitis and periodontal disease, there were 1,648 cases of acute gingivitis (8.8%), followed by chronic periodontitis (3.6%) and chronic gingivitis (2.2%), being more common in females, unlike what was found in Jordan, where 76% were cases of gingivitis, 5.5% were chronic periodontitis, and 2.2% were severe periodontitis, the latter being more common in men than in women, with a male-to-female ratio [19] of 1.6:1. Our results are also contrast with previous studies where there was a higher prevalence of gingivitis in men [20, 21]. They also contradict the higher prevalence of periodontitis found in the adult male population in the USA [22].

Regarding cysts of the oral region, there were 93 cases of radicular cyst, 37 cases of developmental odontogenic cysts, and other pathologies with a prevalence of <1% of the population, being more common in females. These results differ from a study on the prevalence of odontogenic cysts in Sicily, where the most common lesions were radicular cysts (84.5%), followed by dentigerous odontogenic cysts (11.4%), with radicular inflammatory cysts being more common in males [23].

There are limitations such as a lack of literature related to the subject to verify results in some categories (diseases of hard tissues of teeth and other lesions of oral mucosa). The study results provide data and establish the prevalence of a disease and the most affected population, resulting in the predominance of females for almost all conditions. This study is important for its contribution to the institution for monitoring and reporting, aiming to conduct prevention campaigns and thus compare the results with future studies.

5. Conclusions

In conclusion, according to this 9-year retrospective study in a Peruvian hospital, females predominated in almost all pathologies, and a statistically significant association was found between sex and types of caries, disorders of tooth development and eruption, diseases of pulp and periapical tissues, and dentofacial anomalies.

A statistically significant association was also found between sex and gingivitis and periodontal disease as well as periodontal abscess and sinus. This study is pioneering because it determined the most prevalent oral pathologies at one of the main national hospitals in Peru, and its results are useful for oral and maxillofacial surgeons and pathologists.

Data Availability

The data used in the statistical analysis of this study will be available upon authorization of the corresponding managers of the university.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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