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ORIGINAL ARTICLE

ESTIMATED BURDEN AND DISTRIBUTION OF OROFACIAL PAIN AMONG ADULTS IN PAKISTAN: A CROSS-SECTIONAL STUDY

Muhammad Muddassar[1], Abdul Manan Shahid[2], Maria Rabbani[3], Sarah Rabbani[4], Aamir Rafiq[5], Rizwan Arshad[6]

Departments of [1]Oral Medicine & [3]Community Dentistry, HITEC-IMS Dental College, Taxila, [2]Department of Oral Medicine, Islamabad Medical and Dental College, Islamabad, [4]Department of Oral Pathology, Bakhtawar Amin Medical & Dental College, Multan, [5]Department of Prosthodontics, HITEC-IMS Dental College, Taxila, [6]Department of Oral & Maxillofacial Surgery, Bahria University Medical & Dental College, Karachi

ABSTRACT

Background: The quality of life of a person can be greatly impacted by orofacial discomfort, which can be highly incapacitating. Objective of this research was to analyze the estimated burden and distribution of orofacial pain (OFP) among adult population of Pakistan.

Materials & Methods: This cross-sectional study was conducted at the Islam Dental College in Sialkot between December 2021 and May 2022. A specifically designed questionnaire was developed by the researchers to gather relevant information. Following differential diagnosis, the patients were divided into groups according to their types of pain: dental pain, temporomandibular disorders (TMD), neuralgias, headaches, and psychogenic pain. SPSS version (27) was used for evaluating the data that had been gathered.

Results: Total 3750 patients participated in that study, in which 68% of the patients (n=2550) reported experiencing orofacial pain, while 32% (n=1200) did not. Dental origin pain was the most prevalent, affecting 90% (n=2295) of the total patients. Gender distribution was 36% males (n=918) and 64% females (n=1632) which is highly significant (p-value < 0.001). This indicates a strong association between gender and the presence of OFP. Females are significantly more likely to experience OFP compared to males.

Conclusion: This study found a significantly higher prevalence of OFP among female adult dental patients in Pakistan compared to males, highlighting females as major contributors to the rising OFP burden in this population.

KEY WORDS: Prevalence; Orofacial Pain; Adults; Pakistan; Dental Patients.

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INTRODUCTION

Orofacial pain (OFP) is a common health problem that affects individuals throughout the world.[1] OFP is common, and it affects people's everyday lives and general wellbeing, so it has received a global attention.[2-3] It is critical for healthcare practitioners and policymakers to comprehend the incidence of orofacial discomfort in order to establish efficient preventive, diagnostic, and treatment measures. Even though specific published data on the prevalence of OFP in Pakistan is lacking, research from other countries provide essential insights regarding how prevalent it is throughout the globe.[3-6] Approximately ten percent of adults experience OFP, according to worldwide epidemiologic research. On average, women are consistently impacted twice as frequently as males.[2]

OFP is prevalent due to common risk factors and lifestyles, severe injuries, poor oral health habits, malocclusions, anxiety, and Para-functional behaviors.[7,8] Beyond just pain in the body, OFP's effects frequently result in functional restrictions, psychological suffering, and a worse quality of life.[9] Individuals' general well-being and social connections can be strongly impacted by daily activities including eating, speaking, and keeping up oral hygiene.[10]

Healthcare practitioners and policymakers may

Corresponding Author:

Dr. Muhammad Muddassar
Associate professor, Department of Oral Medicine
HITEC-IMS Dental College
Taxila, Pakistan
E-mail: mmuddassar.om@gmail.com

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create focused interventions and treatment plans to lessen the impact of this ailment by comprehending the incidence of OFP among adults in Pakistan. For those in Pakistan who have orofacial discomfort, raising awareness, advocating oral health education, and offering easily accessible and high-quality healthcare facilities may all improve their wellbeing and quality of life. Consequently, the research goal was to ascertain the estimated burden and distribution of orofacial pain (OFP) among adult population of Pakistan

MATERIALS AND METHODS

This cross-sectional study was conducted at the Islam Dental College in Sialkot, Pakistan, between December 2021 and May 2022. The sample size was calculated using the one-sample proportion test formula, assuming a 95% confidence level, an estimated proportion of 0.5 (based on the absence of prior studies), and a desired margin of error of 0.0164. This resulted in a target sample size of 3750 participants. The study was approved by the Institutional Review Board of the Islam Dental College. All procedures were conducted in accordance with the Declaration of Helsinki.

Consecutive adult patients (aged ≥18 years) attending the dental clinic for any reason were invited to participate in the study. Exclusion criteria were: 1-Inability to provide informed consent due to cognitive impairment or language barriers, 2-Currently receiving treatment for OFP or any other chronic pain condition, 3-History of recent facial trauma or surgery. Participants were recruited through convenience sampling and provided informed consent prior to participating. Data were collected using a structured questionnaire that assessed the Sociodemographic information (age, sex, education level, occupation), Oral health status (history of dental problems, current oral pain), and Presence and characteristics of OFP (location, pain frequency, intensity, duration, impact on daily life). The questionnaire was developed based on existing validated instruments and adapted to the specific context of the study population. All questionnaires were administered by trained research assistants in a private setting.

Data were analyzed using SPSS software version 27. Descriptive statistics were used to summarize the sociodemographic characteristics and prevalence of OFP. Chi-square tests were used to examine the association between gender, patients with OFP and patients without OFP. The distribution of OFP characteristics (location, frequency, intensity, duration, impact) was analyzed using descriptive statistics and appropriate measures of central tendency and dispersion. A p-value of < 0.05 was considered statistically significant.

RESULTS

This cross-sectional study surveyed 3750 dental patients, revealing a prevalence of OFP at 68% (figure 1). Dental origin pain was the most prevalent type, affecting 90% of patients with OFP (n=2295, mean intensity 6.2 ± 1.8). Other types of OFP included TMDS (n=105, 4%, mean intensity 4.9 ± 0.7), neuralgias (n=79, 3.1%, mean intensity 3.5 ± 0.9), headaches (n=33, 1.3%, mean intensity 2.1 ± 0.4), psychogenic pain (n=24, 1%, mean intensity 1.8 ± 0.3), and pain from perioral structures (n=17, 0.7%, mean intensity 1.3 ± 0.2), detail given in Table:1.

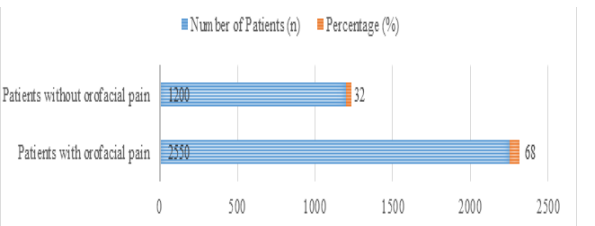

Figure 1: Orofacial Pain Status Among Dental Patients

Higher proportion of female participants (64%) was observed as compared to male (36%), as shown in figure: 2. The Chi-square test statistic (χ^2) is 337.76, which is highly significant (p-value < 0.001) with 1

Table 1: Types of orofacial pain among dental patients

Types of orofacial pain	Number of patients (n)	Percentage (%)	Mean ± Standard Deviation
Dental Origin Pain	2295	90	6.2 ± 1.8
Temporomandibular Disorders	105	4	4.9 ± 0.7
Neuralgias	79	3.1	3.5 ± 0.9
Headache	33	1.3	2.1 ± 0.4
Psychogenic	24	1	1.8 ± 0.3
Pain from Perioral Structures	17	0.7	1.3 ± 0.2

Table 2: Analysis of Patients with and without OFP

Gender	Number of Patients with OFP	Number of Patients without OFP	Total
Female	1632	648	2280
Male	918	552	1470
Total	2550	1200	3750
χ^2	337.76		
df	1		
p	< 0.001		

degree of freedom (Table 2). This indicates a strong association between gender and the presence of OFP. Females are significantly more likely to experience OFP compared to males. Therefore, the statement that females are the main contributors to the rising incidence of orofacial pain among adult dentistry patients in Pakistan is justified based on the statistically significant difference in prevalence observed between genders.

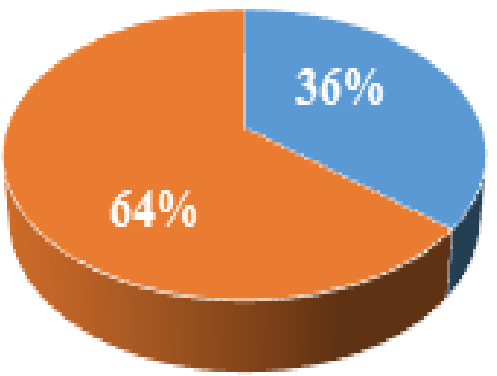

Figure 2: Gender distribution of patients with orofacial pain

DISCUSSION

The purpose of the current study was to ascertain the estimated burden and distribution of OFP among adult population of Pakistan. Our research showed that OFP with 68% of dental patients reporting such pain. This demonstrates the significant burden of OFP among Pakistani people seeking dental care. The estimated rates found in our study are different from those published in worldwide studies carried out in nations like 58% in Tanzania,[11] 18.5% in Burkina Faso,[12] 34% in Benin City of Nigeria,[13] and 18% Brazil.[14] According to these research, there are fewer dental patients who have OFP compared to those who do not. Different incidences of OFP and various degrees of public knowledge of preventative actions among populations in different nations might also be contributing causes to the discrepancies in prevalence rates.[15]

The prevalence of TMD increases worldwide throughout adolescence and may vary from 7% to 30%. TMD patients were 4% in this study which is almost similar to study conducted in US (4.6%) but very less than reported by Lebanon (19.7%)[16] and Saudi arabia (37%).[17]

Majority of neurogenic patients were old age female. In few studies the percentages of neurogenic pain patients were found 0.8%, 0.3%, 0.46 % of the total sample which did not support the findings (3.1%) of this study [18-20] while another study by Hall et al. showed 4.16% nearly similar value to that of this study.[21]

Our findings, which are in line with those of previous worldwide research, revealed that the dental patient group was clearly dominated by female patients (n=1632) as opposed to male patients (n=918).[22-23] Due to variables including hormonal changes during adolescence, pregnancy, and menopause, which can raise the likelihood of gum disease and other oral health disorders, women may have more dental difficulties because of low education and poor general health than men do. In addition, women may notice and report dental problems at greater rates than males due to their greater degree of oral health education and proactive health-seeking behavior.[23-24] Finally, 90% of the total patients, stated they experienced OFP, making it the most prevalent complaint in our research. Riley et al. study found that 87% of patients reported they experienced OFP, which is comparable with the findings of this study.[25]

This study found a 68% prevalence of OFP among adults seeking dental care in Pakistan, highlighting its significant burden. While TMD prevalence (4%) was similar to the US, neurogenic pain prevalence (3.1%) and female predominance (n=1632) were higher than reported in other studies. OFP was the most prevalent complaint (90%), suggesting a substantial need for increased awareness and improved management strategies.

CONCLUSION

The study showed that OFP was remarkably common among adult dentistry patients in Pakistan.

The results highlight the necessity of reducing this load through better education, proactive steps, and readily available healthcare services. The overwhelming majority of female patients emphasizes the requirement for gender-specific factors in oral health promotion. To comprehend the underlying causes and risk factors linked to orofacial pain in Pakistan and design personalized therapies for efficient management, more study is required. Further research is needed to understand cultural and knowledge-based factors influencing OFP variations and targeted interventions are needed for females and specific pain types. Improved dental education and health-seeking behavior are crucial for reducing the burden of OFP in Pakistan.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.

AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	MM, AMS
Acquisition, Analysis or Interpretation of Data:	MM, AMS, MR, SR, AR, RA
Manuscript Writing & Approval:	MM, AMS, MR, SR, AR, RA

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.