Prevalence of orofacial pain perception in dental teaching hospital-Karachi

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Abstract

Background: Pain is defined as an obnoxious subjective and multifaceted phenomenon associated with significant discomfort with potential tissue damage and is one of the most common symptoms of orodental diseases. Orofacial pain is a term that consists of different manifestations of pain in the facial region and oral cavity. Facial pain includes the type of pain whose origin is below the orbitomeatal line, above the neck and infront of the ears, while the oral pain arises from the structures within the oral cavity.

Materials and Methods: The study was approved by the Ethical Committee, Baqai Medical University. A simple random sampling technique was employed and a total of 700 patients were seen at the Outpatient Department of Operative Dentistry, Baqai Dental College. Of them, 300 patients complained of orofacial pain. Data were analyzed using SPSS 19. Descriptive statistics (frequency and percentages) were obtained. Association between pain perception with different age groups were obtained by using Chi-square test ($P = 0.05)$.

Results: Regarding site of pain the commonest site was found to be the lower jaw. 55 (58.5%) of the patients in the age group of 15-25 years complaint of pain in lower jaw. 33 (35.1%) of the patients presented with orofacial pain presentation on the same day. 38 (40.4%) of the patients of 15-25 years old complained of dull pain. Regarding self-medication taken because of pain 20 (23.3%) of the patients in the age group of 26-35 years of age were on ansaid followed by 16 (17%) of the patients in 15-25 years age group taking paracetamol, Synflex by 3 (3.2%)of the patients in the age group of 15-25 years old.

Conclusion: The present study concluded that orofacial pain was common in the study population of age group of 15-25 years old. Therefore, there is a urgent need to educate patients providing them better health care facilities.

Keywords
Epidemiology, orofacial pain, prevalence

Introduction

Pain is defined as an obnoxious subjective and multifaceted phenomenon associated with significant discomfort with potential tissue damage and is one of the most common symptoms of orodental diseases.[1] Pain solely impairs the lives of millions of people globally and is considered to be diagnosed and treated urgently.[2] Orofacial pain includes a myriad of signs and symptoms inside and outside of the oral cavity.[3] Facial pain includes the type of pain whose origin is below the orbitomeatal line, above the neck and infront of the ears, while the oral pain arises from the structures within the oral cavity.[4] It is a broad concept that, includes diseases prevalent in the general population, such as pulpal and periodontal diseases, sinusitis, trigeminal neuralgia, and masticatory muscle and temporomandibular joint (TMJ) pain. Several factors including gender, age, and previous pain experience may vary according to patients responses.[5-7] some of these responses may include treatment seeking and self-medications.[8] Pain is a very frequent reason for patients urgent visits at the dental clinic and most of the pain is dental in origin.[8-10] Orodental pain has been shown to influence patients in different ways.[8-12] The most common influences are: Visit to a dentist, avoidance of certain foods; self-medications, and disruption of sleep.[8,9] Behavioral influences such as reduced social contacts and inability to work have also been reported.[11,12] Research reports of the pain intensity have...
been used as an important tool for measuring the extent of pain.\textsuperscript{(13,14)} However, the pain intensity alone may not accurately measure the severity of pain. When the symptoms of pain persist, limitations on social or daily activities should be considered for discriminating the severity of pain.\textsuperscript{(15,16)} The conditions involving orofacial pain symptoms represents a major health problem, and patients with persistent pain complaints are difficult to manage successfully.\textsuperscript{(17)} Establishing a precise diagnosis and providing effective treatment have become major challenges in medical and dental disciplines. The dentist has a great responsibility of proper management of pain in and around the face, oral cavity, and neck.\textsuperscript{(2)} There is a significant variation in the reported prevalence of orofacial pain ranging from 1.3\% with current cheek pain\textsuperscript{(18)} to 48.4\% with current oral or facial pain.\textsuperscript{(19)} The Adult Dental health Survey reported in the 12 months following the survey, the most frequently experienced oral health problem, by 40\% of adults was orofacial pain.\textsuperscript{(20)} Several research studies have been done on the prevalence of pain perception in adult populations, some of which have included aspects of oral pain.\textsuperscript{(21)} Epidemiological surveys on the prevalence of orofacial pain have been carried out in UK,\textsuperscript{(20)} USA,\textsuperscript{(22)} and Canada.\textsuperscript{(23)} Four studies reported the prevalence of orofacial pain symptoms according to different age groups. A higher proportion of young adults, when compared to older adults, reported orofacial pain symptoms.\textsuperscript{(20,22-24)} Older adults reported sensitivity to hot and cold liquids whereas young adults reported toothache. This is expected because older people suffer more from exposed dentin due to the recession and younger people suffer more from pulpitis.\textsuperscript{(25)}

Therefore, the aim of the study was to assess the prevalence of orofacial pain in the study population and its correlation with different age groups.

\textbf{Materials and Methods}

\textbf{Study type}

Cross-sectional study.

\textbf{Ethical approval}

The study was approved by the Ethical Committee, Baqai Medical University.

\textbf{Study population and sampling design}

A simple random sampling technique was employed and a total of 700 patients were seen at the Outpatient Department of Operative Dentistry, Baqai Dental College. Of them, 300 patients complained of orofacial pain.

\textbf{Examination and collection of data}

A standardized structured questionnaire was developed for the collection of data. The questions mainly asked included the bio data of the patient, location of pain, duration of pain, characteristics of pain, self-prescribed medications, and associated complaints. The patients were later undergone clinical examination by two calibrated examiners, which included inspection, palpation, percussion thermal tests, and radiographs.

\textbf{Inclusion criteria}

- Patients presenting with orofacial pain
- Patients of age group of 15-65 years.

\textbf{Exclusion criteria}

- Patients whose presenting complaint did not include orofacial pain
- Patients who had language problems as this could lead to false data and wrong results.

\textbf{Statistical analysis}

Data were analyzed using SPSS 19. Descriptive statistics (frequency and percentages) were obtained. Association between pain perception with different age groups were obtained by using Chi-square test ($P = 0.05$).

\textbf{Results}

A total of 700 patients attended the Outpatient Department of Operative Dentistry of Baqai Dental College, out of them 300 patients presented with orofacial pain. The prevalence rate in the present study was found to be 43\%. There were 184 (61.3\%) females and 116 (38.7\%) males with age ranges between 15 and 65 years. Table 1 shows descriptive statistics of patients presented with orofacial pain. Regarding the site of pain, the most common site was found to be the lower jaw. 55 (58.5\%) of the patients in the age group of 15-25 years complaint of pain in lower jaw. Table 2 shows the association of the site of pain with age. Table 3 shows the association of side of the face with age. Last onset of orofacial pain was presented in the dental clinic as pain presentation on the same day, day before yesterday, 2 days back, a week ago, and more than a week ago. 33 (35.1\%) of the patients presented with orofacial pain presentation on the same day. Table 4 shows the association of last onset of pain with age. Regarding the nature of orofacial pain, it was presented in the form of dull pain, throbbing,
severe, sharp, and continuous pain. 38 (40.4%) of the patients of 15-25 years old complained of dull pain. Table 5 shows the association of nature of pain with age. Regarding self-medication taken because of pain 20 (23.3%) of the patients in the age group of 26-35 years of age were on ansaid followed by 16 (17%) of the patients in 15-25 years age group taking paracetamol, Synflex by 3 (3.2%)of the patients in the age group of 15-25 years old. Graph 1 shows the association of self-medication with age. 42 (48.8%) of the patients in the age group of 25-36 years complained of sensitivity to hot and cold liquids followed by 17 (19.8%) in the age group of 25-36 years complained of bleeding gums, 9 (9.6%) of the patients in the age group of 15-25 years complained of swollen gums and 3 (3.2%) of patients in the age group of 15-25 years complained of TMJ dysfunction. Graph 2 shows the relationship of associated complaints with age.

**Table 4:** Association of last onset of pain with age

<table>
<thead>
<tr>
<th>Last onset of pain</th>
<th>Age (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15-25</td>
<td>26-35</td>
</tr>
<tr>
<td>Same day</td>
<td>26 (27.7)</td>
<td>28 (32.6)</td>
</tr>
<tr>
<td>Day before</td>
<td>33 (35.1)</td>
<td>25 (29.1)</td>
</tr>
<tr>
<td>Two days back</td>
<td>19 (20.2)</td>
<td>18 (20.9)</td>
</tr>
<tr>
<td>A week ago</td>
<td>11 (11.7)</td>
<td>8 (9.3)</td>
</tr>
<tr>
<td>More than a week</td>
<td>5 (5.3)</td>
<td>7 (8.1)</td>
</tr>
<tr>
<td>Total</td>
<td>94 (100)</td>
<td>86 (100)</td>
</tr>
</tbody>
</table>

**Table 5:** Association of nature of pain with age

<table>
<thead>
<tr>
<th>Nature of pain</th>
<th>Age (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15-25</td>
<td>26-35</td>
</tr>
<tr>
<td>Dull</td>
<td>38 (40.4)</td>
<td>36 (41.9)</td>
</tr>
<tr>
<td>Throbbing</td>
<td>15 (16)</td>
<td>13 (15.1)</td>
</tr>
<tr>
<td>Severe</td>
<td>23 (24.5)</td>
<td>21 (24.4)</td>
</tr>
<tr>
<td>Sharp</td>
<td>18 (19.1)</td>
<td>14 (16.3)</td>
</tr>
<tr>
<td>Continuous</td>
<td>0 (0)</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td>Total</td>
<td>94 (100)</td>
<td>86 (100)</td>
</tr>
</tbody>
</table>

**Discussion**

The aim of the present study was to estimate the prevalence of orofacial pain in the study population of 15-65 years age groups. The prevalence rate was found out to be 43%. Prevalence of orofacial pain reported by various studies varies from place to place and among different age groups. Nomura et al. reported a prevalence of 33.7% among 11-12 years old children in Brazil, Pau et al. reported a prevalence rate of 30.4% in Pakistan, Qazi et al. reported that orofacial pain was more prevalent in the age group of 22-35 years (22%) followed by (21.66%) in the age group of 15-25 years old and (10.33%) in 55-65 years age group. Macfarlane et al. reported a prevalence of 23% among 30-31 years in Wales, U.K. The prevalence of orofacial pain reported by Kikwilu et al. among adult Tanzanians was 58.8%, while McMillan et al. in a study reported a prevalence of 41.6%. The present study results showed that highest prevalence rates for the site of pain was 58.5% in the age group of 15-25 old followed by left side of face (57.4%) in the age group of 15-25 years old. The results are consistent with the study done by Gbenga Omitola and Olabisi Arigbede reported that relationship between the jaws and side of the face was more commonly affected the left side of the face and on lower jaw. The reason is not clear however the lower molars are more prone to caries, pericoronitis, and referred pain.

Regarding last onset of orofacial pain presentation at the dental clinic, the present study reported that 33 (35.1%) of the patients in the age group of 15-25 years delayed their visit to the next day whereas results from other studies reported that patients delay their visit to dental clinics and only come when the pain becomes unbearable. In his study reported that 25% of the patients contacted a dentist the day of pain onset, 32% called the day following the onset whereas 22% waited longer than 1-week. The reasons most patients reported for this attitude were lack of resources, hoping that the pain would disappear on its own without treatment, and self-prescribed medications. Regarding the nature of pain, the present study reported that 38 (40.4%) of the patients in the age group of 15-25 years presented with dull pain. Gbenga Omitola and Olabisi Arigbede in his study reported, that 56.8% of patients described as stabbing, 35.9% as throbbing, and 28.4% stated that pain was dull in nature. Although orofacial pain associated with urgent dental visits is often severe, but pain severity is not a significant factor in the decision to delay contacting a dentist.

Regarding self-medication, majority of the patients were on analgesics/antibiotics before visiting a dental clinic. Gbenga Omitola and Olabisi Arigbede in his study reported that 80% of the patients were on self-prescribed analgesics. Macfarlane et al. in his study reported that 51% of the patients had an appointment...
for a consultation and 64% of the total with orofacial pain had taken medications because of pain. The most common over the counter medications used were paracetamol (43%) followed by 29% of non-steroidal anti-inflammatory drugs (NSAIDs). The present study result showed that 16 (48.5%) of the patients were taking paracetamol and 20 (30.8%) of the patients were taking NSAIDs.
The most common associated complaints of orofacial pain were the tooth sensitivity. Mcmillan et al. [26] in his study reported that 25.7% of the patients in the age group of 18-34 years, 30.1% in 34-54 years age group and 24.5% in patients of 55 years and above complaint of tooth sensitivity to hot and cold liquids. This finding was consistent with estimates by Locker and Grushka [24] who reported sensitivity to hot and cold fluids in 28.8% of patients, bleeding gums in 26.3%, and toothache in 14%. Okunseri et al. [37] reported toothache 34%, bleeding gums 28% in 18-54 years old. The present study reported that 42 (32.1%) of the patients complained of tooth sensitivity in the age group of 26-35 years old. The literature review showed that the patients of age group of 25-34 years were of the highest percentage than the other age groups. [26] The least occurrence of orofacial pain was in the age group of 56-65 years that might be due to awareness of oral hygiene, dental treatment carried out in the past for oral rehabilitation and few well-preserved and protected teeth. [29]

**Study limitations**

The present study has certain limitations that should be mentioned. First, sample size was taken from only one dental hospital in Karachi which showed a study population with similar socioeconomic status. Second, the study lacks related variables to evaluate the prevalence of orofacial pain. Furthermore, other types of orofacial pain were not included in the study.

**Conclusion**

The present study concluded that orofacial pain was common in the study population of age group of 15-25 years old. Most of the patients delayed their dental visit and only seek urgent treatment when pain becomes unbearable although taking self-medication. Therefore, there is urgent need to educate patients providing them better health care facilities.

**References**

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