

## Prevalence of Orofacial Pain Among the Patients Visiting a Dental Institute in Jharkhand

Rohit<sup>1</sup> Abhishek Gupta<sup>2\*</sup> Desh Deepak<sup>3</sup> Swagat Kumar Mahanta<sup>4</sup> Kumari Sonam Jha<sup>5</sup>  
Anshu Singh<sup>6</sup>

<sup>1</sup>Tutor, Department of Oral and Maxillofacial Surgery, Government Dental Institute, RIMS, Ranchi, Jharkhand, India.

<sup>2</sup>Lecturer, Department of oral Medicine and Radiology, KIST Medical College and Teaching Hospital, Lalitpur, Nepal.

<sup>3</sup>Lecturer, Department of Public Health Dentistry, KUSMS, Dhulikhel, Nepal.

<sup>4</sup>Senior Lecturer, Department of prosthodontics, Dr. B.R. Ambedkar Dental College and Hospital, Patna, Bihar, India.

<sup>5</sup>Oral Physician and Maxillofacial Radiologist, Dental Clinic, Ranchi, Jharkhand, India.

<sup>6</sup>Senior Lecturer, Department of Orthodontics, Awadh Dental College, Jamshedpur, Jharkhand, India.

### ABSTRACT

**Background:** Baseline data for the prevalence of Orofacial pain among males and females among the patients visiting the Dental hospital.

**Materials and Methods:** This prospective cross-sectional study was conducted in the department of oral and maxillofacial surgery during from January to December 2019, among the patients with chief complain of pain. The complete diagnosis of pain along with the demographic data was recorded, and frequency analysis was done for the same for the distribution of various types of pain among the males and females.

**Results:** 1042 (633 males and 409 females) patients had chief complain of some of the pain. The average age of the patients was 32.23 years. Pain due to, odontogenic causes were 568 (53.16 %), oral mucosal lesions were 53 (5.08 %), Osseous origin were 47 (4.51%), TMJ Disorders were 157 (15.06%), muscle origin were 78 (7.48%), neuropathic origin were 24 (2.30%), neurovascular origin were 9 (0.86%), maxillary sinus were 45 (4.31 %), salivary gland origin were 8 (0.76%), ear origin/ referred pain were 64 (6.14 %), vascular origin were 2 (0.19 %), Post-traumatic neuralgia was seen in 4 (0.38%), myofascial pain dysfunction syndrome were 23 (2.20%), burning mouth syndrome were 37 (3.55%).

**Conclusion:** The most common orofacial pain is odontogenic, followed by TMJ disorder, and the least common pain is from vascular/eagle syndrome.

**Keywords:** Prevalence, facial pain, Temporomandibular Joint Disorders.

### INTRODUCTION

Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage by activation of nociceptors, which transmits a noxious stimulus to the brain.”<sup>1</sup> **Orofacial pain (OFP)** is a frequent form of pain perceived in the face and/or oral cavity.<sup>2</sup> Orofacial pain (OFP) is defined as pain whose origin is below the orbito-meatal line, above the neck and anterior to the ears, including pain within the

mouth (Zakrzewska & Hamlyn, 1999) <sup>3</sup> It may be caused by diseases or disorders of regional structures, dysfunction of the nervous system, or through a referral from distant sources.<sup>2</sup>

OFP includes both due to physical conditions such as odontogenic, temporomandibular joint pain, myalgias, oral mucosal/soft tissue pain, neuralgias/neurovascular pain, osseous pain or

Received: Nov. 1, 2020; Accepted: Dec. 9, 2020

\*Correspondence Dr. Abishek Gupta.

Department of oral Medicine and Radiology, KIST Medical College and Teaching Hospital, Lalitpur, Nepal.

Email: drabhishekgupta30373a@gmail.com

pain due to psychological conditions such as anxiety disorders, post-traumatic neuralgia, myofascial pain dysfunction syndrome and burning mouth syndrome. Dentists come across all ranges of this kind of orofacial pain during their practice. This pain prevalence varies according to food habits, cultural habits, genetic predisposition and various other climatic and geographical factors. Adequate knowledge about these various types of orofacial pain and their prevalence is of utmost importance for the general routine practice of dentists as well as for the orofacial pain specialist who is generally focused on only the varieties of orofacial pains. Since most of these patients approach the dental OPD first, from where they could be either treated or referred to the orofacial pain specialist/ pain clinics and according to our literature search, there has not been such studies in our state Jharkhand, and this study was planned to get a baseline data for the prevalence of Orofacial pain among males and females among the patients visiting the Dental hospital.

## MATERIALS AND METHODS

This prospective cross-sectional study was conducted in the Department of Oral and Maxillofacial Surgery, RIMS among the patients visiting the department from January 2019 to December 2019. Patients were explained about their use in the study, and only their case history data was to be used for the same which included the demographic data and the diagnosis and its descriptions, after which the patient who agreed for participation giving consent were included in the study. Patients >18 years of age who wished to participate in the study and were able to cooperate in spite of pain were included in this study. Patients were examined as usual with a recording of the complete case history. Later, the diagnosis decided to include the patient in the category of types and subtypes of pain and those with an idiopathic pain were excluded. Only new patients, either visiting directly or referred from other dental departments, were included in the study to avoid the confusion of duplication of patients. Patient's age, gender and clinical diagnosis were recorded for the study. Collected data were entered in SPSS 20, and frequency analysis was done.

## RESULTS

Among the total patients visiting the Department of Oral and maxillofacial surgery, 1253 patients agreed to participate in the study. Among the agreed 1253 patients, 1042 (83.16%) had chief complain of some of the other types of pain. The average age of the patients with a complaint of Orofacial pain was 32.23 years with a minimum of 18 years and a maximum of 89 years. Among the participating 1042 with pain, 633 were males, and 409 were females.

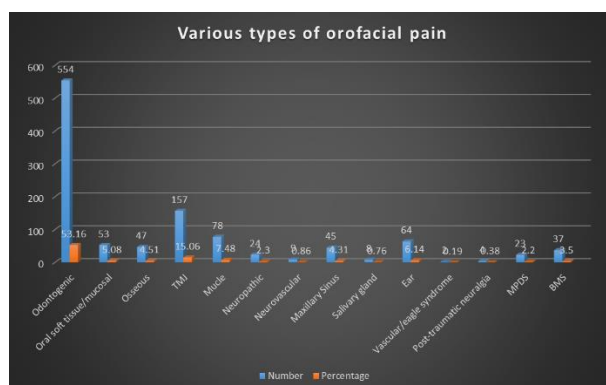


Fig 1: Graph showing prevalence of various types of Orofacial pain.

The distribution pain among males and females is shown in Table No. 1 and figure 1. Most of the patients i.e. 568 (53.16 %) had pain due to odontogenic causes among which 368 (66.42%) were males and 286 (33.57%) were females. Pain due to oral mucosal lesions were 53 (5.08 %), 25 (47.16%) males and 28 (52.83%) females. Pain of Osseous origin were 47 (4.51%), 33 (70.21%) males and 14 (29.78) females. Pain due to TMJ Disorders were 157 (15.06%) , 68 (43.31 %) males and 89 (56.68 %) females. Pain of muscle origin were 78 (7.48%) , 38 (48.71 %) males and 40 (51.25%) females. Pain of neuropathic origin were 24 (2.30%) , 15 (62.50 %) males and 9 (37.5%) females. Pain of neurovascular origin were 9 (0.86%), 2 (22.22%) males and 7 (77.77%) females. Pain of maxillary sinus were 45 (4.31 %), 18 (40.00%) males and 27 (60.00 %) females. Pain of salivary gland origin were 8 (0.76%), 3 (37.5%) males and 5(62.5%) females. Pain of ear origin/ referred pain were 64 (6.14 %), 30 (46.87%) males and 34 ( 53.12 %) . pain of vascular origin were 2 (0.19 %) , both were males. Post traumatic neuralgia was seen in 4 (0.38%) of the patients, 3 (75%) males and 1(25%)

Table 1: Showing distribution of pain among males and females.

Conditions	Types/Origin site of Pain	Number (N)	%	Males (%)	Female (%)
Physical	Odontogenic	554	53.16	368 (66.42)	286 (33.57)
	Oral soft tissue/mucosal	53	5.08	25 (47.16)	28 (52.83)
	Osseous	47	4.51	33 (70.21)	14 (29.78)
	TMJ	157	15.06	68 (43.31)	89 (56.68)
	Muscle	78	7.48	38 (48.71)	40 (51.25)
	Neuropathic	24	2.30	15 (62.50)	9 (37.5)
	Neurovascular	9	0.86	2 (22.22)	7 (77.77)
	Maxillary sinus	45	4.31	18 (40.00)	27 (60.00)
	Salivary gland	8	0.76	3 (37.5)	5 (62.5)
	Ear	64	6.14	30 (46.87)	34 (53.12)
	Vascular/eagle syndrome	2	0.19	2 (100)	0 (0)
Psychological	Posttraumatic Neuralgia	4	0.38	3 (75)	1 (25)
	MPDS	23	2.20	8 (37.78)	15 (65.21)
	BMS	37	3.55	2 (5.40)	35 (94.59)

female. Myofascial pain dysfunction syndrome (MPDs) was seen among 23 (2.20%) of patients, 8 (37.78%) males and 15 (65.21%) females. Burning mouth syndrome (BMS) was seen among 37 (3.55%), 2 (5.40 %) males and 35 (94.59 %) females.

## DISCUSSION

According to Jharkhand disease burden profile 2016<sup>4</sup>, the average total life lived with oral disorder disability was around 2.5 years. This included orofacial pain as well, percentage yet not evaluated. Overall oral disorders caused more years of life disability than protein-energy malnutrition and diarrheal diseases. We do not have baseline data regarding orofacial pain, specifically. This study was done to get basic data of the orofacial pain among patients visiting a dental hospital, specific to the department of Oral and Maxillofacial Surgery.

The pain prevalence was around 83.16 % in our study which is far more than the other studies done in a dental clinic where the prevalence was around 16.1 % (Horst OV et al. 2015 )<sup>5</sup>, 18.7 % ( Lacerda JT et al. 2004 )<sup>6</sup>, 42.72% (Oberoi SS et al.)<sup>7</sup>. The reason could be that we included all the patients visiting the OPD of Oral and Maxillofacial Department, where generally patients are referred for

extractions which may be due to pain or also for any other kind of pain management, whereas the other studies included the patients visiting the dental clinic as general where patients visit for many more reasons apart from pain. In other studies conducted among the general population, the prevalence of orofacial pain was also very low as compare to our study, 23.6 % (Crook J et al. 1984)<sup>8</sup>, 39.7 % (Locker D et al. 1987)<sup>9</sup>, 26 % (Macfarlane TV et al. 2002)<sup>10</sup>, 57.76% (Manjunath G et al. 2012)<sup>11</sup>, 10% (Shetty A et al. 2015)<sup>12</sup> 28.3 % (Jaiswal AK et al. 2015)<sup>13</sup>, 17.9 % among the school children (Kumar S et al. 2016)<sup>14</sup>,

The average age of the patients with a complaint of Orofacial pain was 32.23 years with an age range of a minimum of 18 years and a maximum of 89 years, in our study. Similar age ranges were included in other studies in dental clinic<sup>5,6,7</sup> and similar age ranges ( 18-65 and above) among few studies<sup>9,10,11,12</sup> and slightly higher mean age (approx. 40-54 years) in studies done by Crook J et al<sup>8</sup> and Tomoyasu Y et al<sup>15</sup> in the general population. Among the 1042 patients with pain who agreed to participate, 633 were males, and 409 were females, which was similar in studies done by others.<sup>6,11,13</sup> In other studies there were more females<sup>5,10,12,15</sup>, and

in few other studies the gender distribution was equal<sup>7,8,9,14</sup>

Most of the patients, i.e. 568 (53.16 %) had pain due to odontogenic causes which were similarly highest in studies done by Horst OV etal<sup>5</sup> (56.52 %), Oberoi SS etal<sup>7</sup> (57.6%), Manjunath G etal<sup>11</sup> (26.73%), Shetty A etal<sup>12</sup> (90%), Jaiswal AK etal<sup>13</sup> (28.3%), Kumar S etal<sup>14</sup> (56.42%), but was, in contrast, to study done by Tomoyasu Y etal<sup>15</sup> (17.2%). The second most common reason for pain in our study was TMJ Disorders 157 (15.06%) which was similarly seen in studies by Horst OV etal<sup>5</sup> (41.37 %), Oberoi SS etal<sup>7</sup> (14.8%), Manjunath G etal<sup>11</sup> (11.81%), Kumar S etal<sup>14</sup> (24.02%) whereas in a study by Macfarlane TV etal<sup>10</sup> pain around the eyes, ears and temples preceded TMJ pain. In our study, the pain of muscle origin was 3<sup>rd</sup> most common, 78 (7.48%) which was less than the study done by Tomoyasu Y etal<sup>15</sup> (23.5%) and more than the study done by Macfarlane TV et al. <sup>10</sup> (3.3%). The 4<sup>th</sup> most common pain was of ear origin/ referred pain, 64 (6.14 %), which was similar in a study by Macfarlane TV etal<sup>10</sup> (6%). The 5<sup>th</sup> most common cause of the pain was due to oral mucosal lesions, 53 (5.08 %) in our study which was less in a study done by Manjunath G etal<sup>11</sup> (3.56%), Kumar S etal<sup>14</sup> (1.6%) and more in a study done by Oberoi SS etal<sup>7</sup> (8%)

The other pain included those of Osseous origin were 47 (4.51%), maxillary sinus was 45 (4.31 %) which could not be compared with other studies as was not mentioned earlier. BMS was seen among 37 (3.55%), which was less in study by Macfarlane TV etal<sup>10</sup> (1.2%), Oberoi SS etal<sup>7</sup> (6.4%), Kumar S etal<sup>14</sup> (0.8%). The pain of neuropathic origin were 24 (2.30%), which was far more in a study done by Tomoyasu Y etal<sup>15</sup> (30.3%). The pain of neurovascular origin were 9 (0.86%), salivary gland origin were 8 (0.76%), vascular origin were 2 (0.19 %), Post-traumatic neuralgia was seen in 4 (0.38%) of the patients and MPDS was seen among 23 (2.20%) of patients. These types of pain were not mentioned in other previous studies, so we could not compare them. We could not compare the prevalence of all the types of orofacial pain with other studies as none of the studies were near similar to ours. However, we tried to compare and discuss as much as possible.

## CONCLUSION

Our study has provided a fair enough baseline data for the prevalence of orofacial pain, and we would conclude that males are more likely to seek dental consultation for orofacial pain. The most common orofacial pain is odontogenic, followed by TMJ disorder, and the least common pain is from vascular/eagle syndrome.

## CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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