Orofacial pain in patients at the dental clinic of the Faculty of Dentistry University of Health Sciences

Abstract

Objectives: Orofacial pain is a significant issue affecting a considerable portion of the global population, with a prevalence of about 10%-25%. Women are more likely to experience this type of pain compared to men, with a ratio of 2:1, and it is more common among the elderly. Lao people have long been dealing with pain problems and have sought various services, including medical, traditional medicine, and dental care. The present study aims to address these issues of orofacial pain and management of dental patients in the dental clinic at the Faculty of Dentistry, University of Health Sciences.
Method:A descriptive cross-sectional study was conducted at the dental clinic, Faculty of Dentistry. The variableswas induced in personal geographic of the participants,pain characteristics,pain origin, pain evaluation, and management. The pain quality and intensity were assessed using short-form McGill pain questionnaires and visual analog scale (VAS).
Results: The total numberof participants was 1,743. The prevalence of orofacial pain in the dental clinic was 19.8%(n=345).All the orofacial pain study patients werefound to be mostly female (58.8%) (OR= 1.4:1) with a mean age of 42 years old. The most common type of pain reported was odontogenic pain (93%), followed by non-odontogenic pain (7%). Pain locations were also assessed in the maxillary and mandibular regions in majority. Pain quality was described as mostly throbbing, sharping and aching. Pain intensity was rated on a visual analog scale of 1-10, with the average pain intensity aremoderate (VAS=4-6). The most common pain management strategies used by participants were endodontic treatment and tooth extraction (22%, 46%) and following by medication (5.2%) for non-odontogenic pain. Overall, the study highlighted the quality and intensityof pain in the dental clinic, as well as the managementbased on the clinical diagnosis of thepatient.
Conclusion: Orofacial pain in the dental clinic is still acommon issue,particularly both odontogenic and non-odontogenic orofacial pain. The treatment of non-odontogenic orofacial pain is a challenge. Dentists should improve their skills in diagnosing and managing it as necessary.

Keywords: Orofacial pain, pain quality, pain intensity,and management.

1. Introduction

Pain is an abnormal sensation that occurs both physically and mentally. When the body experiences such a problem, it clearly affects or interferes with people's daily lives. Therefore, when someone experiences pain, it is necessary to seek a solution to the problem completely through various methods, such as consulting a doctor. The issue of pain is related to both the body and emotions, leading to stress or depression [1]. In addition to impacting one's mental state, pain or physical injury problems also affect people's quality of life, particularly their ability to engage in family and social activities [2]. The prevalence of pain in populations worldwide ranges from 9.9% to 50.3%, with women, the elderly, and individuals living in rural areas experiencing higher rates of pain [3][4].

Pain in the orofacial area is a significant issue affecting a considerable portion of the global population, with a prevalence of about 10%-25%. Women are more likely to experience this type of pain compared to men, with a ratio of 2:1, and it is more common among the elderly. In the United States, it is reported that up to 16.1%

of individuals seeking dental services experience pain in the orofacial region. This type of pain also poses economic challenges for families, impacting health and requiring a significant portion of the treatment budget [6]. Patients often seek dental care toaddress these issues. The Lao people have long been dealing with pain problems and have sought various services, includingmedical, traditional medicine, and dental care, to address these issues. Pain in the orofacial area is a common reason for patients to visit the dentist at the Faculty of Dentistry, University of Health Sciences, to seek treatment. Despite the lack of information or statistics on pain in the orofacial region in the Lao People's Democratic Republic, it is crucial to gather data to inform teaching and planning strategies aimed at maintaining oral and dental health among the diverseethnic groups in Laos.

This study is the first report of orofacial pain at the dental clinic ofthe Faculty of Dentistry. We describe the clinical characteristics of orofacial pain, including demographics, pain location, pain characteristics, pain evaluation, and pain management.

2. RESEARCH METHODOLOGY

2.1. Study design and population

This study was a cross-sectional descriptive study aimed at describingthe characteristics, location, pain quality, pain intensity, and pain management of patients in the outpatient department(OPD) who seek services at the dental clinic of the Faculty of Dentistry, University of Health Sciences.The study was conducted 5 months, from February to June 2024with a total of 345participants at the age 16 years and older.

2.2. Examine and data collection

The sampling method was applied to all patients who visited the outpatient department of the dental clinic and had current orofacial pain. The patients who met the inclusion criteria were further interviewedto gather personal information such as age, sex, education, occupation, medical history, dental history, chief complaint, and underwent a thorough oral examination. After conducting the interview, examination, and pain assessment, a diagnosis will be made, and a treatment plan will be formulated in the dental clinic.Patients will then be referred to the appropriate unit for further treatment.All of the orofacial pain management in this study was followed according to the routine guidelines of the dental clinic at the Faculty of Dentistry, University of Health Sciences.

2.3. Orofacial pain evaluation

The quality of pain in the orofacial region was assessed using the short-form McGill Pain Questionnaire to evaluate the nature and pattern of pain in the region, which can assess chronic pain in the orofacial area. Researchers described and asked theparticipants questions about the characteristics of their pain. The patients explained their experience of pain and recorded it on the questionnaire form [7,8].Additionally, the visual analog scale (VAS) will be used to evaluate the intensity of orofacial pain. The VAS isindicated by a horizontal ruler 10 centimeters (100 mm) in length, marked by “no pain” (score of 0) and worst imaginable pain (score of 10). The data recording asked the patients to indicate their pain orally and indicate on the VAS ruler score how much pain they experienced [9,10,18].

2.4. Statistical analysis

After collecting and verifying all the data records for accuracy and completeness, the data are entered into the program SPSS version 27 for analysis. The distribution of orofacial pain categories was analyzed using descriptive

statistics based on the study's objectives. The variables are presented as percentageand chi-square tests for the statistically significant values, whichare $p<0.05$.

2.5. Ethical approval

The ethical approval of his study was approved by the ethics committee of University of Health Sciences, Lao PDR. Ref. No. 660/IREC.

3. RESULTS

3.1. Population Demographics

The total number of patients who visited the dental clinic during the study period from February to June 2024 was 1,743. Out of these, 345 patients (19,79%) reported experiencing pain and were screened (table 1). This study conducted on345 patients, including 203 women (58.8%) and 142 men (41.2%), aged between 16 and 96 years old, with anaverage age of 42 years old. The education level of the participants is mostly bachelor or higher (31.1%). Most of the patients in this study are from Vientiane Capital (92.5%), with some from other provinces. The occupations of the study participants ranged from unemployed to civil servants, with the majority being civil servants (Table 2).

Table 1. Prevalence of orofacial pain in dental clinic patients

Orofacial pain	Gender		Total (%)
	Male (%)	Female (%)	
No-experienced	536 (30.75)	862 (49.45)	1,398 (80.20)
Experienced	142(8.15)	203(11.64)	345 (19,80)
Total	**678 (38.9)**	**1,065 (61,1)**	**1,743 (100)**

Table 2. Distribution of patients with orofacial pain according to socio-geographic characteristic

Age (years)	Gender		Total (%)
	Male (%)	Female (%)	
16-19	8 (2.3)	15(4.3)	23(6.7)
20-29	30(8.7)	45(13)	75(21.7)
30-39	21(6.1)	37(10.7)	58(16.8)
40-49	37(10.7)	32(9.3)	69(20)
50-59	20(5.8)	43(12.5)	63(18.3)
60-69	14(4.1)	19(5.5)	33(9.6)
70-79	8(2.3)	5(1.4)	13(3.8)
80-89	4(1.2)	4(1.2)	8(2.3)
90-99	-	3(0.9)	3(0.9)
Total	**142(41.2)**	**203(58.8)**	**345(100)**
Education level			
None	2(0.6)	10(2.9)	12(3.5)
Primary school	12(3.5)	31(9)	43(12.5)
Secondary school	22(6.4)	35(10.1)	57(16.5)
High school Collage	25(7.2)	50(14.5)	75(21.7)
Bachelor or higher	26(7.5)	24(7)	50(14.5)
	55(15.9)	53(15.4)	108(31.1)
Total	**142(41.2)**	**203(58.8)**	**345(100)**
Resident			
Vientiane Capital	132(38.3)	187(54.2)	319 (92.5)
Another province	10(2.9)	16(4.6)	26 (7.5)
Total	**142(41.2)**	**203(58.8)**	**345(100)**

Occupation			
Unemployed	13(3.8)	49 (14.2)	62 (18)
Student	15(4.3)	22 (6.4)	37 (10.7)
Farmer	11(3.2)	20 (5.8)	31 (9)
Labor	16(4.6)	6 (1.7)	22 (6.4)
Business	23(6.7)	54 (15.7)	77 (22.3)
Government staff	49(14.2)	50 (14.5)	99 (28.7)
Retired	15(4.3)	2 (0.6)	17 (4.9)
Total	**142(41.2)**	**203(58.8)**	**345(100)**

3.2. Medical history and chief complaint

All patients in this study, who came for examination and interviews are elderly, so the most common health problems or illnesses are high blood pressure (11.6%), followed by diabetes (2.6%), and others. The drugs regularly used in this group of patients are antihypertensive drugs. Clinical symptoms detected in patients with oral and facial painwere pain and swelling in the affected area, with all patients experiencing pain (100%) (Table 3).

Table 3. Personal illness

Personal Disease	**Gender**		**Total (%)**
	Male (%)	Female (%)	
None	119 (34.5)	152 (44.1)	271 (78.6)
Hypertension	14 (4.1)	26 (7.5)	40 (11.6)
Diabetes	2 (0.6)	7 (2)	9 (2.6)
Heart disease	2 (0.6)	1 (0.3)	3 (0.9)
Hyperthyroidism	-	2 (0.6)	2 (0.6)
Cancer	-	2(0.6)	2 (0.6)
Asthma	-	2 (0.6)	2 (0.6)
Multi systemic disease	5 (1.4)	11 (3.2)	16 (4.6)
Total	**119 (34.5)**	**152 (44.1)**	**271 (78.6)**
Personal medication			
Yes	20 (5.8)	40 (11.6)	60 (17.4)
No	122 (35.4)	163 (47.2)	285 (82.6)
Total	142 (41.2)	203 (58.8)	345 (100)
Clinical signs			
Pain	142(41.2)	203(58.8)	345(100)
Edema	59 (17.1)	56 (16.2)	115 (33.3)
Fever	3 (0.9)	6 (1.7)	9 (2.6)
Dysphagia	4 (1.2)	9 (2.6)	13 (3.8)
Trismus	8 (2.3)	10 (2.9)	18 (5.2)
Burning	-	1 (0.3)	1 (0.3)
Bleeding	2 (0.6)	1 (0.3)	3 (0.9)

3.3. Distribution of orofacial pain

The orofacial paincan be caused by two main origins: odontogenic painand non-odontogenic pain [15]. In this study,we found that odontogenic pain accounts for the majority of cases (92.7%), while non-odontogenic pain accounts for only 7.3%. The duration of orofacial pain onset in the orofacial region before patients sought examination or interview in this study ranged from 1 day to 1 year,with the most common duration being 3 days, followed by 1 and 2 weeks. A few of them delayed seekingthe dentist to solve their pain [16].Pain locations that lead to pain in the orofacial area include the jaw, especially the maxillary (33.3%) and mandibular

(57.1%), as well as the oral mucosa (2.9%), and other orofacial soft tissue sites (Table 4).

The clinical diagnosis of the patients who came to the service during this period, based on the actual clinical examination, revealed that most of them had odontogenic causes. Therefore, the diagnosis showed many dental problems, such as periapical periodontitis/abscess (33.9%), followed by pericoronitis (20.3%), irreversible pulpitis (13.3%), and periodontal disease (13.9%). On the other hand, non-odontogenic orofacial pain was found to be related to oral mucosa diseases such as oral lichen planus (2.6%), trigeminal neuralgia (1.7%), andother diseases (Table 5).

Table 4. Distribution of orofacial pain

Pain origin	Gender		Total (%)
	Male (%)	Female (%)	
Odontogenic	133(38.6)	188(54.4)	321(93)
Non-odontogenic	9(2.6)	15(4.4)	24(7)
Total	**142(41.2)**	**203(58.8)**	**345(100)**
Duration of pain			
1 day	6 (1.7)	8 (2.3)	14 (4.1)
3 days	37 (10.7)	42 (12.2)	79 (22.9)
1 week	35 (10.1)	48 (13.9)	83 (24.1)
2 weeks	17 (4.9)	32 (9.3)	49 (14.2)
1 month	27 (7.8)	39 (11.3)	66 (19.1)
6 months	9 (2.6)	8 (2.3)	17 (4.9)
1 year	11 (3.2)	26 (7.5)	37 (10.7)
Total	**142 (41.2)**	**203 (58.8)**	**345 (100)**
Pain location			
Mandibular	81(23.5)	116(33.6)	197(57.1)
Maxillary	44(12.8)	71(20.6)	115(33.3)
Tongue	1(0.3)	-	1(0.3)
Oral mucosa	5(1.4)	5(1.4)	10(2.9)
Mandibular and maxillary	7(2)	5(1.4)	12(3.5)
Submandibular	2(0.6)	2(0.6)	4(1.2)
Facial	2(0.6)	4(1.2)	6(1.7)
Total	**142(41.2)**	**203(58.8)**	**345(100)**

Table 5. Distribution of orofacial pain according to clinical diagnosis

Orofacial pain	Gender		Total (%)
	Male (%)	**Female (%)**	
Odontogenic pain			
Reversible pulpitis	6(1.7)	19(5.5)	25(7.2)
Irreversible pulpitis	16(4.6)	30(8.7)	46(13.3)
Periapical periodontitis/abscess	56(16.2)	61(17.7)	117(33.9)
Pericoronitis	31(9)	39(11.3)	70(20.3)
Periodontal disease	21(6.1)	27(7.8)	48(13.9)
Alveolitis/dry socket	-	1(0.3)	1(0.3)
Radicular cyst	-	1(0.3)	1(0.3)
Cracked tooth	2 (0.6)	9 (2.6)	11 (3.2)
Space infection	1(0.3)	1(0.3)	2(0.6)
Non-odontogenic pain			
Trigeminal neuralgia	2 (0.6)	4 (1.2)	6 (1.7)
Major aphthous	2 (0.6)	1 (0.3)	3 (0.9)
Oral cancer	1 (0.3)	2 (0.6)	3 (0.9)

Oral lichen planus	3 (0.9)	6 (1.7)	9 (2.6)
TMDs	-	2 (0.6)	2 (0.6)
Lymphadenitis	1 (0.3)	-	1 (0.3)
Total	**142 (41.2)**	**203 (58.8)**	**345 (100)**
Pain quality			
Throbbing	61 (17.7)	81 (23.5)	142 (41.2)
Shooting	24 (7)	38 (11)	62 (18)
Sharping	67 (19.4)	98 (28.4)	165 (47.8)
Cramping	4 (1.2)	2 (0.6)	6 (1.7)
Hot-burning	11 (3.2)	19 (5.5)	30 (8.7)
Aching	65 (18.8)	95 (27.5)	160 (46.4)
Heavy	16 (4.6)	16 (4.6)	32 (9.3)
Tender	47 (13.6)	53 (15.4)	100 (29)
Tiring-exhausting	14 (4.1)	15 (4.3)	29 (8.4)
Sickening	38 (11)	54 (15.7)	92 (26.7)
Fearful	7 (2)	17 (4.9)	24 (7)
Punishing-cruel	19 (5.5)	25 (7.2)	44 (12.8)

3.4. Pain quality

The nature of pain is described as characteristic of pain onset in short-form McGillPain Questionnaires [7,8] in the whole body or even in the orofacial area.The most common symptoms reported by the study patients were dental symptoms such as throbbing, sharp pain, and aching pain (Table 5). The distribution of pain quality based on the cause showed that dental pain such as reversible pulpitis, irreversible pulpitis, and periapical periodontitis/abscess were described with a high percentage in the nature sign as throbbing, sharp, and aching, as well as periodontal pain and pericoronitis. Oral mucosa disease and oral soft tissue diseases were described as throbbing, stabbing and hot-burning pain [11]. The Pearson Chi-square test, analysis of the nature of orofacial pain, showed that most symptoms were significantly relatedto diseases such as dental caries, periodontal disease, periocoronitis, trigeminal neuralgia, oral mucosa diseases pain, and oral cancer (p-value<0.3) (Table 6).

Table 6. Distribution of pain quality according to the cause

Orofacial pain	**Pain quality**												**P-value**
	Throbbing (%)	Shooting (%)	Sharping (%)	Cramping (%)	Hot-burning (%)	Aching (%)	Heavy (%)	Tender (%)	Tiring-exhausting (%)	Sicking (%)	Fearful (%)	Punishing-cruel (%)	
RP	4 (1.2)	3 (0.9)	16 (4.6)	-	1 (0.3)	3 (0.9)	1 (0.3)	2 (0.6)	-	6 (1.7)	1 (0.3)	1 (0.3)	<0.001*
IRP	26 (7.5)	9 (2.6)	30 (8.7)	1 (0.3)	1 (0.3)	16 (4.6)	1 (0.3)	10 (2.9)	-	6 (1.7)	2 (0.6)	4 (1.2)	0.294
PAP/AB	41 (11.9)	17 (4.9)	42 (12.2)	2 (0.6)	4 (1.2)	66 (19.1)	10 (2.9)	43 (12.5)	10 (2.9)	27 (7.8)	6 (1.7)	6 (1.7)	0.258
PC	39 (11.3)	17 (4.9)	36 (10.4)	3 (0.9)	9 (2.6)	37 (10.2)	10 (2.8)	23 (6.6)	9 (2.6)	20 (5.7)	7 (2.0)	18 (5.2)	0.177
PD	15 (4.3)	6 (1.7)	19 (5.5)	-	6 (1.7)	29 (8.4)	4 (1.2)	11 (3.1)	1 (0.3)	14 (4.0)	2 (0.6)	8 (2.3)	0.258
DS	-	-	-	-	-	1 (0.3)	-	-	-	-	-	-	1.000
RC	-	-	-	-	-	1 (0.3)	-	-	-	-	-	-	1.000
SI	2 (0.6)	1 (0.3)	1 (0.3)	-	-	1 (0.3)	1 (0.3)	1 (0.3)	-	-	-	-	1.000
TN	5 (1.4)	5 (1.4)	2 (0.6)	-	1 (0.3)	-	2 (0.6)	-	5 (1.4)	5 (1.4)	3 (0.9)	4 (1.2)	0.838
MA	1 (0.3)	1 (0.3)	3 (0.9)	-	3 (0.9)	-	1 (0.3)	1 (0.3)	1 (0.3)	3 (0.9)	-	2 (0.6)	0.722
OC	2 (0.6)	2 (0.6)	1 (0.3)	-	-	1 (0.3)	1 (0.3)	1 (0.3)	-	2 (0.6)	1 (0.3)	-	0.802
OLP	1 (0.3)	1 (0.3)	5 (1.4)	-	5 (1.4)	2 (0.6)	-	3 (0.9)	-	4 (1.2)	1 (0.3)	-	0.060**
CT	5 (1.4)	-	9 (2.6)	-	-	3 (0.9)	1 (0.3)	4 (1.2)	1 (0.3)	3 (0.9)	-	1 (0.3)	0.662
TMDs	1 (0.3)	-	1 (0.3)	-	-	-	-	-	1 (0.3)	1 (0.3)	1 (0.3)	-	1.000
LD	-	-	-	-	-	-	-	1 (0.3)	1 (0.3)	1 (0.3)	-	-	1.000
Total	**142 (41.1)**	**62 (17.9)**	**165 (18.8)**	**6 (1.8)**	**30 (8.7)**	**160 (46.3)**	**32 (9.2)**	**100 (28.9)**	**29 (8.4)**	**92 (26.6)**	**24 (6.9)**	**44 (12.7)**	**0.310****

*Pearson Chi-Square statistic significant, p-value <0.05

**Fisher's Exact statistic significant, p-value <0.05

RP= Reversible pulpitis, IRP= Irreversible pulpitis, PAP/AB= Periapical periodontitis/abscess, PC= Pericoronitis, PD= Periodontal disease, DS= Dry socket, RC= Radicular cyst, SI= Space infection, TN= Trigeminal neuralgia, MA= Major aphthous, OC= Oral cancer, OLP= Oral lichen planus, CT= Cracked tooth, TMDs= Temporomandibular disorders, LD= Lymphadenitis.

3.5. The pain intensity

The pain intensity assessed using the visual analog scale (VAS) shows that all participants in the study experienced pain ranging from the lowest level (1) to the most severe level (10).The majority of participants reported moderate pain levels (VAS=4-6), and this painwas significantly related (p-value<0.044). When comparing pain intensity based on the gender of the participants, women experienced more pain than men (OR=1.4:1) (Table 7). The Pearson chi-square tests analysis showed a comparison of pain intensity based on the cause of pain origin variables. Odontogenic orofacial pain, particularly dental pain, was the primary cause of orofacial pain. This study found that non-odontogenic orofacial pain, such as trigeminal neuralgia, was the most severe (VAS=10) (p-value<0.001) as well as orofacial space infection (p-value<0.001)(Table 8).

Table 7. Pain intensity

Orofacial pain (VAS)	Gender		Total (%)	p-value
	Male n (%)	Female n (%)		
0	-	-	-	
1-3	56(16.2%)	68(19.7%)	124(35.9%)	
4-6	59(17.1%)	106(30.7%)	165(47.8%)	0.044*
7-9	27(7.8%)	25(7.2%)	52(15.0%)	
10	0(0%)	4(1.2%)	4(1.1%)	
Total	**142(41.2%)**	**203(58.8%)**	**345(100%)**	

VAS: No-hurt (0), Hurt little bit (1-3)[mild pain], Hurts little more and hurts even more (4-6)[moderate pain], Hurts whole lot (7-9)[severe pain], Hurts worst (10)[most severe pain] [10,17,18].

Table 8. Statistical analysis of pain intensity among different orofacial pain origin

Oral disease		Pain intensity (VAS)				p-value
		1-3	4-6	7-9	10	
DC	Chi-square	0.708	0.263	1.597	1.806	5.113
	Sig.	0.400	0.608	0.206	0.179	0.276
PD	Chi-square	1.594	0.405	5.181	0.654	6.445
	Sig.	0.207	0.525	0.023*	0.419	0.168
PC	Chi-square	1.223	0.157	4.158	1.030	9.346
	Sig.	0.269	0.692	0.041*	0.310	0.053*
TN	Chi-square	3.383	2.376	5.819	55.157	62.894
	Sig.	0.066*	0.123	0.016*	0.001*	0.001*
OMDs	Chi-square	0.931	0.196	0.676	0.158	1.472
	Sig.	0.335	0.658	0.411	0.691	0.832
OC	Chi-square	1.269	0.255	0.537	0.035	1.449
	Sig.	0.260	0.614	0.464	0.851	0.836
TMDs	Chi-square	0.181	1.844	1.917	0.024	2.736
	Sig.	0.671	0.174	0.166	0,878	0.603
SI	Chi-square	1.115	1.844	1.917	41.874	44.701
	Sig.	0.099	0.174	0.166	0.001*	0.001*
AV/DS	Chi-square	0.556	1.094	0.178	0.012	1.094
	Sig.	0.456	0.296	0.673	0.914	0.895

*Pearson Chi–squares test, statistic significant p-value <0.05;

DC= dental caries; PD= periodontal disease; PC= periocoronitis; TN= trigeminal neuralgia; OMDs= oral mucosa diseases; OC= oral cancer; TMDs= temporomandibular disorders; SI= Space infection; AV/DS= alveolitis or Dry Socket.
VAS: No-hurt (0), Hurt little bit (1-3) [mild pain], Hurts little more and hurts even more (4-6) [moderate pain], Hurts whole lot (7-9) [severe pain], Hurts worst (10) [most severe pain] [10,17,18].

3.6. Pain management

Orofacial pain can arise from many different factors, which are divided into two main categories: pain originating from the teeth and pain originating from other soft tissue structures in the orofacial area. As a result, there are many types of pain that can occur in the orofacial region, and each type can be diagnosed according to the underlying cause. There are various treatment options available for managing pain in the mouth and face, depending on the specific diagnosis. Therefore, treatment in a dental clinic should be tailored to the individual patient's needs, including non-pharmacologic and pharmacologic treatment.The orofacial pain management of these participants was carried out according to the routine protocol of the dental clinic at the Faculty of Dentistry, University of Health Sciences. The management depended on the clinical diagnosis or grade of the disease, ranging from pulp capping and endodontic treatment for odontogenic origin to medication for non-odontogenic orofacial pain. The most prevalent treatment options were endodontic treatment and tooth extraction (Table 9).

Table 9. Orofacial pain management according to the cause.

Pain management	Gender		Total (%)	p-value
	Male (%)	Female (%)		
Indirect/direct pulp capping	10(2.9%)	17(4.9%)	27(7.8%)	
Endodontic treatment	29(8.4%)	47(13.6%)	76(22%)	
Tooth extraction	67(19.4%)	94(27.2%)	161(46.7%)	0.602
Scaling/root planning	23(6.7%)	25(7.2%)	48(13.9%)	
Surgery/drainage	8(2.3%)	7(2%)	15(4.3%)	
Medication	5(1.4%)	13(3.8%)	18(5.2%)	
Total	**142(41.2%)**	**203(58.8%)**	**345(100%)**	

4. DISCUSSION

Orofacial pain is a sensation that occurs in the soft and hard tissues of the head, face, mouth, and throat. The source of this pain can be attributed to various factors such as teeth, surrounding organs, muscles, blood vessels, jaw joints, salivary glands, and bones. Therefore,pain in the orofacial region can originate from two main sources: 1) Odontogenic pain, which includes dentalcaries, periodontal disease, and cracked teeth, and 2) Non-odontogenic pain, which can be caused by various conditions such as temporomandibular joint disease, trigeminal neuralgia, neuropathic pain following herpes virus infection, bacterial infection, oral ulcers, sinus issues, psychological factors, and others [12,13].

The research found that among the 345 patients who participated in the study, the prevalence of orofacial pain was 19.8%, with a greater proportion of females (1.4:1). The age of the participants ranged from 16 to 96 years, with an average of 42 years, and they had various occupations. The majority of participants were government employees. Most had a high school education level. 93% of orofacial pain cases were caused by odontogenic factors, while only 7% were non-odontogenic pain. Clinical symptoms included pain experienced by all participants, with some also experiencing swelling, dysphagia, trismus, and mouth soreness. The pain in this area was mostly described as sharp, throbbing, shooting, stabbing, and aching (p-value <0.00000). Pain intensity ranged from mild to severe pain, with

majority of experiencing moderate pain (VAS=4-6). However, other studies have also reported that orofacial pain is mostly caused by odontogenic factors [6,14].

The prevalence of orofacial pain is higher in individuals 11-33%,with women being more affected than men[13,19]. In our study, we found that the prevalence of orofacial pain among patients visiting the dental clinic was 19.8%, with a higher prevalence in women. This is consistent with previous reports from general dental clinics in the United States of America (16.1%) and the general population in Canada (12%) [6,14,20]. Most cases were odontogenic pain [21,22]. In our study, we found that the incidence of non-odontogenic pain was 7%, with the majority being oral lichen planus and trigeminal neuralgia (2.6% and 1.7% respectively). This incidence was higher compared to previous reports frompublic surveys and global prevalence studies [24,25,26,27,28].When comparing the prevalence of orofacial pain among different age groups, we found that the age groups 20-29 and 40-49 years had a higher prevalence than other groups. This is similar to other studies that have shown a higher prevalence of pain in adulthood (30-39 and 40-49 years) [23]. The duration of the chief complaint before seeking the dentist is important to address the individual issue. If there is a delay, the issue may worsen or become more severe. In our study, we focused on the duration of orofacial pain issuesbefore patients came to the dental clinic. Our results showed that the duration ranged from 1 day to 1 year, with the majority of patients seeking treatment within 3 days to 1 week. Some patients delayed seeking treatment for 6 months to 1 year before visiting the dentist, particularly for non-odontogenic pain [16,29].

Pain in the orofacial region can originate from many sources or locations in the oral cavity, especially hard tissue and soft tissue. Teeth, alveolar bone, and soft tissue in the oral cavity and surrounding areas are the origins of pain. This study found that orofacial pain can originate from both sources, such as teeth and soft tissue in the oral cavity, including teeth, gingivae, and soft tissue. Majority of the pain located in mandibular and maxillary (57% and 33%) following by oral mucosa. [15,30]. This study only identified a few symptoms, such as dental diseases, oral mucosal disease, trigeminal neuralgia, and oral cancer. Due to the short study period, additional diseases may have been missed. If the study were conducted over a longer period, more diseases could potentially be identified.

Odontogenic pain caused by teeth, especially pulpal pain from reversible and irreversible pulpitis, periapical periodontitis/abscess, pericoronitis, cracked teeth, etc., are all common types of pain and are most frequently seen in dental clinics [6,15]. In the dental clinic of the Faculty of Dentistry, we also found that odontogenic orofacial pain was more prevalent than non-odontogenic pain (93%), which is consistent with a previous study [16]. This may be due to various factors [23]. Non-odontogenic pain in patients at the dental clinic of the Faculty of Dentistry was identified at an incidence of 7%. This pain mostly included oral mucosa diseases such as oral lichen planus and major aphthous ulcers, as well as trigeminal neuralgia. These results indicate a higher prevalence of non-odontogenic pain compared to what has been reported in hospital in Tanzania (3.3%) [22].Trigeminal neuralgia is found in 1.7% of the population, with women being more affected than men at a ratio of 2:1. Symptoms present as overlapping odontogenic pain, which can make it difficult for clinicians to distinguish from dental pain. This confusion can lead dentists to mistakenly extract the tooth, ultimately failing to alleviate the patient's pain [24,31].

Pain quality refers to the nature of pain present in clinical cases inhumans. Each disease shows specific signs and characteristics. Orofacial pain can be caused by various sources,especially hard tissue and soft tissue, including dental pulp and surrounding tooth pain. In addition to dental pain, the soft tissues such as muscles, blood vessels, and nerves also exhibit specific types of pain in the orofacial region. In our study, we identified different types of pain associated with various diseases such as dental pain, neuralgia, cancer pain, and oral mucosa-

related pain;most of them showed throbbing, shooting, stabbing, sharp, hot-burning, and aching pain. Pulpal pain was found to have a high percentage of cases showing throbbing, shooting, and aching pain. Oral mucosa diseases such as major aphthous ulcers and oral lichen planus exhibited symptoms such as hot-burning and sharp pain. Neuralgia, such as trigeminal neuralgia, presented clinical signs of sharp, shooting, stabbing, and electric shock-like pain. Although the symptomswere not significantly analyzedstatistically because they may be influenced by various factors. The pain quality observed in the present study is consistent with previous studies [11,22,32]and shows similar characteristics.

Pain intensity in the orofacial region varies throughout the body, ranging from mild to severe pain. In the current study, patients with orofacial diseases reported pain levels ranging from mild to severe on a visual analog scale (VAS) of 1-10, with an average intensity of moderate (VAS=4-6). Dental pain was found to be less severe compared to trigeminal neuralgia, which was the most severe type of pain reported (VAS=10). All pain intensities in the orofacial region were statistically significant (p-value <0.044). The pain intensity in the current study is similar to other studies with a level of moderate pain [23,30,32]. The pain intensity varied depending on the disease and the differentcharacteristics of pain described, as well as the duration experienced by the patients. Even though the diagnoses seemed similar, the pain characteristics were different. However, all symptoms seemed to have the same pain level [33].

The management of orofacial pain is based on clinical diagnosis. There are various treatment options available for managing pain in the current study, including non-pharmacologic and pharmacologic treatments. The orofacial pain management of these participants was carried out according to the routine protocol of the dental clinic at the Faculty of Dentistry, with pain evaluation and management planning. The pain from dental causes had primary treatments such as pulp capping, endodontic treatment, and root planning. For non-odontogenic origins and infectious diseases, medication was prescribed depending on the severity of the disease (Table 9) [20,33,34]. All of these treatments have good results, especially for dental pain, but for non-dental pain, it is challenging to treat. Patients need to be monitored for a long time, and sometimes patients disappear without knowing whether their pain has been resolved better or worse. Therefore, dentists must pay special attention to the treatment of pain in the orofacialregion [35,36].

Study limitation: The study also has limitations in assessing the nature of pain and pain intensity because the researcher has less experience with pain in the orofacial region. Therefore, for the results of the study to accurately reflect the reality of the patient, the researchers or dentists should improve their skills in understanding pain in order to evaluate, diagnosis, distinguish, and plan management effectively. Non-odontogenic pain, in particular, presents a challenge for diagnosis and management [37,38,39].

5. CONCLUSION

Orofacial pain continues to be a common issue for patients that dentists need to address, which is why patients seek treatment at dental clinics. Consequently, the prevalence of pain in the orofacial region in dental clinics remains high. Furthermore, diseases such as odontogenic and non-odontogenic pain, as well as theintensity of pain experienced by patients, can have a significant impact on their daily lives, necessitating dentists to find solutions.

CONSENT

All participants always ask for permission to participate in the study and signed a consent form.

ETHICAL APPROVAL

Ethical Approval was approved by the Ethics Committee of the University of Health Sciences Lao PDR No. 660/IREC.

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