

# Body pain maps improve the report of painful complaints in patients with orofacial pain\*

*Mapas de dor corporal aprimoram os relatos das queixas dolorosas em pacientes com dor orofacial*

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## SUMMARY

**BACKGROUND AND OBJECTIVES:** Assessing patients' pain complaints is essential for determining adequate diagnosis and therapeutic interventions in orofacial pain (OFP). Thus, the aim of this study was to verify the frequency of reported pain complaints compared to those marked on patients' body pain maps.

**METHOD:** Data were collected from the Orofacial Pain Clinic archives (532 patients) of the Orofacial Pain Clinic, Araraquara Dental School. All individuals answered a questionnaire to report their pain complaints and completed a body map indicating their pain areas. The frequency of reported pain complaints was compared to the frequency of painful sites identified on body maps. Nine anatomic regions were considered: head, face, neck, shoulders, arms, chest, abdomen, back, and legs. In addition, sensitivity, specificity and kappa values were calculated comparing the pain reports to body pain drawings, the latter being considered the golden standard.

**RESULTS:** Mean age of total sample was  $33.5 \pm 13.8$

years,  $33.9 \pm 13.9$  for females and  $31.7 \pm 13.1$  for males. Higher prevalence of pain was observed among female patients. For both genders, the regions of greater pain reports were located in the upper body areas and a significant difference between pain reports and pain drawings was observed for body regions below the neck. Body pain maps demonstrated superiority against pain reports in assessing pain complaints during anamnesis.

**CONCLUSION:** Major pain reports were not an effective method to identify all pain complaints because body maps showed the presence of additional pains in OFP patients.

**Keywords:** Drawings, Facial pain, Pain, Self-report, Temporomandibular joint.

## RESUMO

**JUSTIFICATIVA E OBJETIVOS:** Identificar as queixas dolorosas dos pacientes é essencial para determinar diagnósticos e intervenções terapêuticas adequadas em dor orofacial (DOF). Assim, o objetivo deste estudo foi verificar a frequência das queixas de dor relatadas comparando-as àquelas marcadas pelos pacientes em mapas de dor.

**MÉTODO:** Os dados foram coletados dos prontuários de 532 pacientes da Clínica de Dor Orofacial da Faculdade de Odontologia de Araraquara. Os indivíduos responderam a um questionário informando suas queixas de dor e completaram um mapa corporal indicando as áreas dolorosas. A frequência dos relatos foi comparada à frequência dos locais identificados nos mapas. Foram consideradas nove regiões anatômicas: cabeça, face, pescoço, ombros, braços, tórax, abdômen, costas e pernas. Também foram calculados sensibilidade, especificidade e valores kappa comparando os relatos de dor aos mapas, os últimos considerados padrão-ouro.

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**RESULTADOS:** A média etária da amostra foi de 33,5  $\pm$  13,8 anos, 33,9  $\pm$  13,9 anos para as mulheres e 31,7  $\pm$  13,1 anos para os homens. Foi observada uma maior prevalência de dor entre as mulheres. Em ambos os gêneros, as regiões com mais queixas de dor estavam localizadas na parte superior do corpo e uma diferença significativa entre os relatos de dor e os desenhos de dor foi observada para as regiões abaixo do pescoço. Os mapas de dor corporal demonstraram superioridade sobre os relatos de dor na identificação das queixas dolorosas durante a anamnese.

**CONCLUSÃO:** O relato da queixa principal não foi um método eficiente para conhecer todas as queixas dolorosas, pois os mapas corporais evidenciaram a presença de dores adicionais em pacientes com DOF.

**Descritores:** Articulação temporomandibular, Autor-relato, Desenhos, Dor, Dor orofacial.

## INTRODUCTION

Orofacial pain (OFP) is a common problem with high incidence in the population. The etiology of chronic OFP remains unclear and the treatment of patients with chronic OFP conditions, i.e. temporomandibular disorders (TMD), is influenced by its clinical assessment<sup>1</sup>. Thus, identifying patient's chief complaint is essential for determining adequate diagnosis and therapeutic interventions. Although the screening protocols of OFP patients include questions about the presence of pain in adjacent facial areas such as head, neck, ears and shoulders, the other body areas are rarely considered by dental professionals.

Previous studies have reported an association between OFP and general pain conditions<sup>2-7</sup>. An example of those relationships is fibromyalgia, which, if not known, may difficult a successful OFP treatment<sup>8</sup>.

An important information to be identified in chronic pain patients is pain distribution and how it is felt<sup>9</sup>. Human body schemes, in which patient draws the specific location and distribution of pain areas, have been useful for diagnosing and treating several chronic pain conditions<sup>2,9,10</sup>. It is suggested that by using body pain maps there is a greater possibility of patients indicating other pain areas – out of face – that could not have been reported by them in the chief complaint.

Thus, the aim of this study was to verify the frequency of reported pain complaints compared to those marked on patient's body pain maps. We also investigated if body maps constitute an important tool to improve general assessment of pain in patients with OFP.

## METHOD

This study was carried out after the approval of the Institution's Research Ethics Committee (CAAE 0019.0.199.000-05) and data were collected from medical records of patients treated in the Orofacial Pain Clinic, Araraquara Dental School (UNESP) – from 2000 to 2004.

Trained graduate students applied standardized questionnaires consisting of an interview and a systematic evaluation of cervical, cranial, facial, dental, and other oral structures according a clinical protocol to detail: (a) chief complaint; (b) general pain characteristics when it was the chief complaint (location, intensity, quality, duration, time of pain worsening); (c) presence of headache and other body pain complaints; and (d) the patient's medical history.

After the interview, patients were asked to mark all pain sites on a human body map. Nine potential pain sites (head, face, neck, shoulders, arms, chest, abdomen, back, and legs) could be distinguished. This assessment and diagnosis criterion has been extensively used for evaluation and classification of pain patients<sup>2,9,10</sup>.

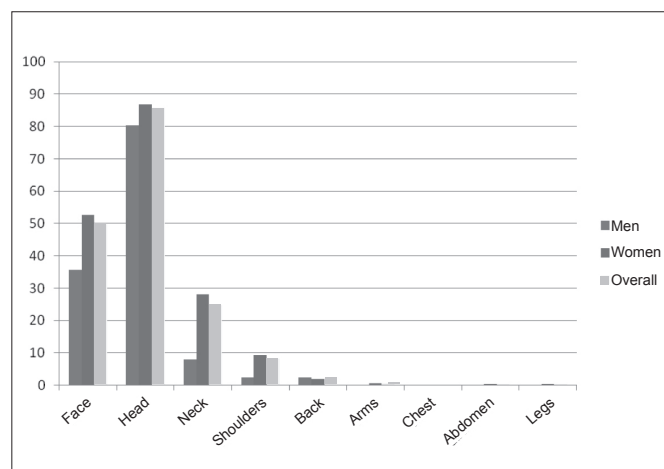
Data were collected from two parts of clinical records. Chief complaint areas were collected based on patients' reports and body pain areas were marked by patients on body maps.

Descriptive analysis were used to compare the frequency of reported complaints to painful sites identified on body maps, overall and by gender, in all anatomic regions. In addition, sensitivity, specificity and kappa index tests were performed to compare reports effectiveness to body pain draws, the latter considered the golden standard.

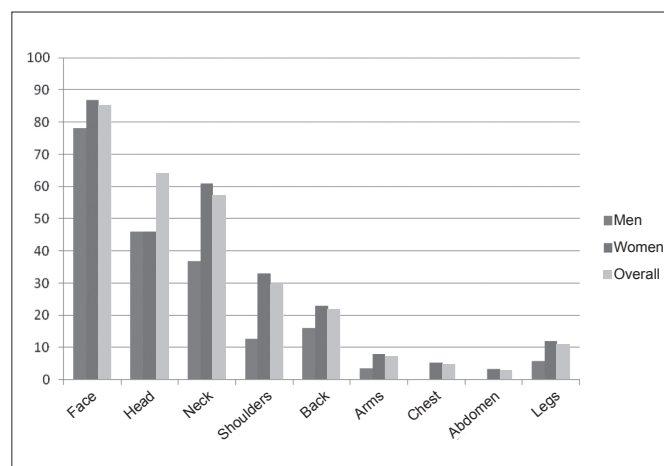
## RESULTS

Overall, 532 patients were evaluated, with higher prevalence of females (84%). Mean age of total sample was 33.5  $\pm$  13.8 years, being 33.9  $\pm$  13.9 for females and 31.7  $\pm$  13.1 for males. Most common diagnosis was TMD (90.8%), followed by headaches (2.6%) and painless bruxism (2.6%), dental pain (2.1%), neuropathic pain (0.4%) and neck pain (0.4%). Diagnosis remained unclear for six patients (0.9%). As provided in graph 1, a higher prevalence of pain reports was observed among female patients. Overall, the regions with greater pain reports were: head (85.71%), face (49.81%), neck (24.81%) and shoulders (8.08%). Other body pain reports ranged from 0% to 2%.

Graph 2 reflects patients' body pain maps. As observed in pain reports, regions with more pain draws were face (85.34%), head (63.72%), neck (56.95%) and shoulders



Graph 1 – Pain reports frequency for each identifiable body region, overall and per gender.



Graph 2 – Pain areas frequency drawn for each identifiable body region, overall and per gender.

(29.70%). Other areas ranged from 2% to 21%, especially back (21.80%), legs (10.90%) and arms (7.14%). Sensitivity and specificity values for pain reports compared to body pain maps, as well as their respective Kappa index, are described in table 1. Most reported areas did not agree or weakly agreed to those marked on maps (kappa values ranged from -0.32 to 0.3). As it can be observed, reported pain complaints did not reach satisfactory values for the effective diagnosis of patients' pain complaints.

## DISCUSSION

Many aspects may interact within human body to determine diseases onset and progression, and also the development of persistent pain. Environmental parameters such as ethnicity, culture, stress and gender are also essential variables<sup>3,11</sup>. With regard to gender, our study has shown a higher prevalence of females seeking OFP treatment. In addition, a higher prevalence of pain was also observed in females, suggesting that they are at higher risk for developing pain conditions<sup>12</sup>. Emerging evidences suggest that both male and female hormones may contribute to marked gender-related differences in the occurrence of musculoskeletal pain<sup>13</sup>. Gender differences may be also expressed by pain processing in nociceptive pathways as well as by environmental and cultural issues<sup>11</sup>.

Our results confirm previous findings that regions of greater pain reports are located in the upper body areas, both for males and females. However, 69% to 76% of TMD patients also present pain outside of head and facial regions<sup>2,14</sup>. A correlation between OFP and referred pain in other body parts is also described in the literature. Referred pain is considered a risk factor for the onset of TMD among females and may also influence the maintenance of TMD in both genders<sup>14</sup>.

Table 1 – Sensitivity, specificity and Kappa index values for pain reports as compared to body pain maps (golden standard), considering patients who answered to both.

Region	Sensitivity	Specificity	Kappa Index
Face (n = 495)	52.1	43.2	-0.016
Head (n = 497)	87.3	10.1	-0.032
Neck (n = 496)	39.4	95.4	0.300
Shoulders (n = 495)	19.1	96.8	0.198
Back (n = 497)	8.7	99.7	0.123
Arms (n = 497)	7.9	100.00	0.137
Chest (n = 496)	4.4	100.00	0.080
Abdomen (n = 497)	6.7	99.8	0.111
Legs (n = 494)	3.5	100.00	0.059

In addition, some OFP predictors were also identified, being one of them the presence of widespread pain.<sup>15</sup> For example, greater prevalence of cervical spine symptoms has been observed in patients with TMD<sup>16</sup>. Central sensitization, neural convergences, neuroplasticity and descending inhibitory pain system dysfunction are some phenomena that may contribute to the maintenance and spread of pain in those patients<sup>17</sup>. Like other chronic pain conditions, TMD may lead to states of comorbid depression and anxiety, worsening patients' painful manifestations<sup>1,10,14</sup>. Recent findings observed that psychological distress is common in orofacial pain patients, particularly on those with widespread pain<sup>18</sup>.

A significant difference between pain reports and pain draws was observed on body regions below the neck, both for males and females, which may be due to people believing that signs and symptoms outside the mouth should not be reported to dentists<sup>10</sup>. The only exception was for head, whose reported complaints were superior to map drawings. This may be due to a misinterpretation of the pain site, because both facial pain and headaches are in the OFP context. While headaches are defined as pain above the orbitomeatal line, facial pain is anterior to the pinna and beneath the orbitomeatal line, above the neck<sup>19</sup>. Patients who present to primary care practitioners are often treated for their syndromes, while co-existing complaints are often ignored<sup>20</sup>. The attention of the dentist is generally focused on the orofacial region. Patients, in turn, also tend to limit their pain descriptions to the facial area, because they do not expect to receive treatment for symptoms outside mouth or face. Some possible failures in this professional approach are highlighted, such as the presence of generalized pain conditions that can be involved in the maintenance of patient's pain, and, if not known, may difficult OFP treatment<sup>10</sup>.

In line with the literature, our findings suggest that a thorough approach may reveal co-existing pain regions. Self-reports were only good for detecting face and head pain, but not for detecting pain in other body areas. Thus, both information from self reports and body maps seem essential during an OFP interview, since the former seem to complement the latter and vice versa. This approach allows dentists to gather more complete information that will lead to a better diagnosis and, consequently, to global patients' treatment.

In general, patients have marked more painful areas on the map than those reported as chief complaints. In our study, pain maps were better than pain reports to identify painful areas. So, we suggest that dentists use both methods in the anamnesis of OFP patients.

## CONCLUSION

Chief complaint report was not an effective method to identify all pain complaints, because body maps have evidenced the presence of additional pains in OFP patients

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