Prevalence of Musculoskeletal Symptoms in Dental Students

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Abstract

The aim of this study was to determine the prevalence of musculoskeletal symptoms in a population of dental students at a public university in Colombia.

Cross-sectional study, where 106 dental students from a public university in Colombia were randomly selected. Students answered a questionnaire composed of 22 questions.

Main results:

- The prevalence of musculoskeletal pain in the student population was 82.1%, being significantly greater prevalence in women (89.7%) than in men (68.4%) (p = 0.0133) and CI (95%: 2.8%–4.0%).
- The body regions most affected, both by frequency and severity of pain, were the lower and upper back, neck, hands-wrists, and shoulders.

Keywords: Musculoskeletal symptoms, Musculoskeletal pain, Dentistry, Risk factors, Dental students.

Introduction

The study of musculoskeletal symptoms in dental professionals has been a topic of interest for several years [1–4].

However, few studies have focused on student populations [3, 5], even though they are exposed to similar professional dentists' conditions during their clinical practices.

In Colombia, dental students have to perform clinical practices as part of their academic program.

Although the student population is usually very young, and clinical practices are not conducted on a continuous schedule, students sometimes complain of musculoskeletal discomfort that could lead to disease.

The aim of this study was to determine the prevalence of musculoskeletal symptoms in a population of dental students at a public university in Colombia.

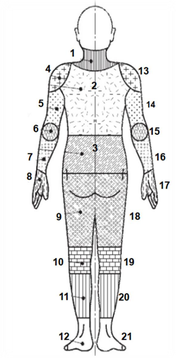
Methodology

Study Population

- A cross-sectional descriptive study was conducted in a population of dental students studying between the fifth and tenth semester of a public university in Colombia.
- **From a total of 302 dental students, 106 were randomly selected.**

Study Design:

- **The dental students answered a questionnaire composed of 22 questions** grouped in three sections: (1) sociodemographic characteristics, (2) clinical practice data, and (3) musculoskeletal symptoms.
- The severity of musculoskeletal pain was evaluated using a **visual analog scale of 100 mm in length**. The value zero (0) indicated no pain in the scale, and the value one hundred (100) indicated maximum pain.



The body map proposed by (ISO/TS 20646: 2014), **divided into 21 body** regions, was adapted to record musculoskeletal symptoms [6].

Results

Socio-demographic characteristics:

- 64.2 % of the students are women. Average age was 24.3 years (SD = 3.1 years); average weight and height were 63.6 kg (SD = 11.1 kg) and 165.3 cm (SD = 9.0 cm), respectively.
- 92.5% are right-handed, 4.7% are left-handed, and 2.8% are ambidextrous.

Main results:

- Students spend an average of 10.5 hours per week (SD = 4.1 hours) in clinical practice and attend an average of 2.5 child patients (SD = 1.3) and 3.0 adult patients (SD = 1.7) per week.
- 27.4% reported that musculoskeletal pain had interfered with their daily activities, and only 3.8% consulted a physician for these complaints.
- Other symptoms reported: tiredness (60.4%), muscle fatigue (41.5%), numbness in wrist hands (21.7%), and 17.9% weakness in the grip of instruments and muscle spasms.
- The body regions with the highest frequency of pain were (n=106): lower back (61), upper back (58), neck (58), the left-hand wrist (44) and right hand (34), right shoulder (32) and left shoulder (29). **These same body regions presented the greatest severity of pain.**

- **82.1% of the students reported suffering musculoskeletal pain in at least one part of the body during the clinical practices.**
- **We found a higher prevalence of musculoskeletal pain in women (89.7%) than in men (68.4%).**

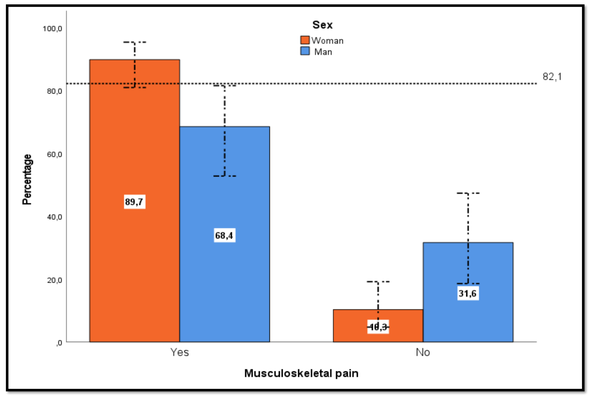


Fig. 1. Prevalence of musculoskeletal pain by sex among dental students (n=106).

Discussion

- This study's results are consistent with musculoskeletal symptoms reports in professional dentists [1–4], showing that dental students can also be affected by their clinical practices.
- The prevalence of musculoskeletal pain obtained in our study (82.1 %) corresponds to literature reports. For example:
  - Study 1: the prevalence of general musculoskeletal pain ranges between 64% and 93% [1].
  - Study 2: student population found a prevalence of pain between 41% and 71% [5].
  - Study 3: a review among dental professionals in Western countries, the prevalence ranged from 10.8% to 97.9% [4].
- In our study, the prevalence of musculoskeletal pain was greater in women than in men in general and by all body region; being significant ($p < 0.05$) only for the neck, left hand-wrist, right shoulder, right hand-wrist, and right knee.
- Similar findings have been reported both in a professional [7] and in a student population [5], also in the Colombian population [8].
- Our results suggest the need for ergonomic analysis of the conditions under which our dental student population perform their clinical practices [3]. We hope to carry out this analysis in the second part of the project.

Conclusions

- The prevalence of musculoskeletal pain in the student population was 82.1%, a significantly greater prevalence in women (89.7%) than in men (68.4%).
- Also, a greater prevalence of pain by body region was found in women than in men.
- The body regions most affected, both by frequency and severity of pain, were the lower and up-per back, neck, hands-wrists, and shoulders.
- Findings show university authorities the need for a systemic ergonomic analysis of clinical practices to improve students' well-being and health.