

## Symptoms of musculoskeletal disorders perceived among dental students.

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## 1. Introduction

Musculoskeletal disorders (MSDs) are defined as a group of diseases with various symptoms affecting different parts of a locomotive system and they manifest mainly with pain, muscle stiffness, restricted range of motions, and decreased muscular strength (World Health Organization 2021). The prevalence of general musculoskeletal pain in oral health professionals (dentists and dental hygienists) ranges between 62% and 93% (Hayes, Cockrell, and Smith 2009). Common MSDs affecting dental workers were neck, shoulder and lower back (Gupta, Ankola, and Hebbal 2013), but elbow-forearm and wrist-hand were also reported (Ramírez-Sepúlveda et al. 2020). Early onset of MSDs among undergraduate dental students have been reported, where the occurrence ranged from 39% to 93% (Kapitán et al. 2021). Students are taught of the risks of MSD during the early phase of their training, mostly during preclinical training, before contact with patients. Moreover, less emphasis is given to this occupational health issue over time.

Thus, the aim of this study was to determine the frequency of symptoms of musculoskeletal disorders perceived by undergraduate dental students in the last 12 months.

## 2. Methodology

The methodology was an observational, cross-sectional study. The sample consisted of undergraduate students who had completed 1 to 3 years of clinical training (third to fifth year of school, respectively) at the School of Dentistry, National University of Asunción in 2022. Students of both genders agreed to freely participate in the study (n = 120), which was approved by the local Ethics in Research Committee (approval code: P017-2022).

The data was collected through a self-reported questionnaire (Nordic questionnaire). The participation was voluntary, and all the respondents signed the informed consent. The association between gender and presence of MSD symptoms was statistically analyzed using Fisher's exact test at a 5% significance level.

## 3. Results & Discussion

One hundred and twenty students from the third, fourth, and fifth year (n = 40 for each school year) were surveyed. Of these, 91 (75.8 %) were female and 8 (6.7 %) were left-handed. Among the latter, only 3 (37.5 %) worked regularly in a left-handed dental chair. The average number of weekly hours spent working in the clinic were 17, 18 and 20 hours for third, fourth and fifth year, respectively.

Only 11/120 (9.17 %) of the students surveyed reported having no discomfort in any of the regions. We excluded 31 subjects who answered affirmatively that they had been diagnosed with an MSD, had a congenital MSD or that had suffered trauma that affected the musculoskeletal system. The final sample size was 89 students.

The prevalence of MSD symptoms was more frequent in female students (92.9%) than in males (73.7%) (Fisher's exact test;  $p = 0.033$ ). Symptoms were mostly reported in the neck (73%) and in the lower back region (69.7%) followed by the wrist and hands (50.6%) (Figure 1).

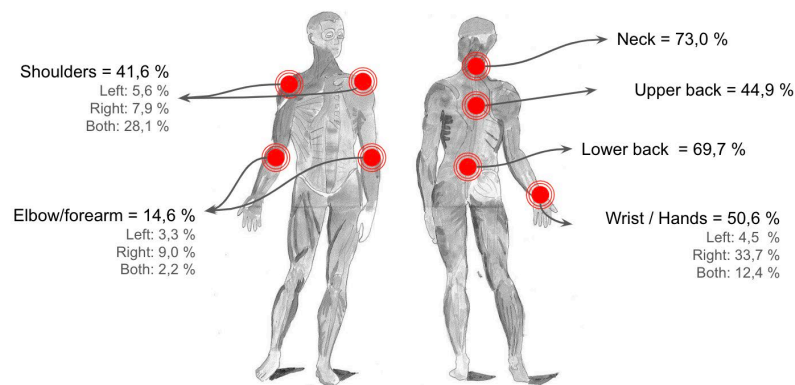


Figure 1. Frequency of perceived symptoms according to body region (n=89).

The 12-month prevalence of perceived symptoms in terms of body regions is shown in figure 2. Fifty-seven students reported pain in the neck and fifty-one in the lower back.

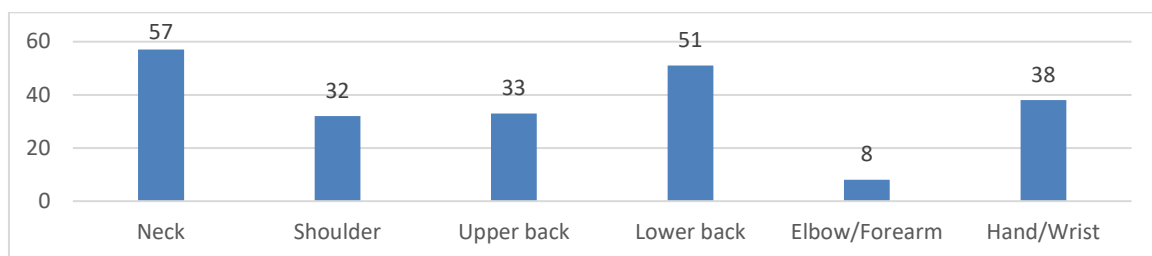


Figure 2. Frequency of students with pain history in the last 12-months according to anatomical region (n = 89).

Note: Some students reported symptoms in multiple parts of the body.

#### 4. Conclusions

Symptoms of MSD was frequent among dental students. The neck and lower back were the most affected regions reported by students, followed by the wrist/hands.

#### 5. References

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