

Association of Oral Conditions with Quality of Working Life of Brazilian Police Officers.

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Abstract: Objective: To evaluate the impact on the quality of working life of Brazilian police officers with Temporomandibular Disorders (TMD). Materials and Methods: The sample consisted of 52 subjects and information was collected through the WHOQOL-BREF questionnaire and the Fonseca Anamnesis Index to evaluate the level of temporomandibular disorder (TMD), followed by clinical examination to determine the experience of dental caries, by means of the DMFT index. Descriptive and inferential statistical analysis (chi-square test) was performed through the Statistical Package for the Social Sciences software. The significance level was 5%. Results: The sample was predominantly composed of males (94.2%) with a mean age of 39.4 years (± 9.4) and mean service length of 17.3 years (± 11.0). The mean DMFT index value was 15.6 (± 6.1), especially the "filled" component, whose mean was 12.1 (± 5.4). The presence of TMD was found in 67.3% of the sample, of predominating mild degree (91.4%). Quality of working life (QWL) was classified as unsatisfactory/neutral by 57.7% of participants. There was a statistically significant association between QWL and presence of TMD ($p < 0.05$); however, there was no association between DMFT index and the presence of TMD ($p > 0.05$). Conclusion: Although military police officers presented a high mean DMFT index value, there was highest prevalence of the "filled" component, evidencing a past experience of caries and evidencing that this population has access to oral health services. The occurrence of TMD was high, predominating the mild degree, and there was an association with QWL.

Keywords: Temporomandibular Joint Disorders; Quality of Life; Oral Health.

INTRODUCTION.

Quality of working life (QWL) directly affects the quality of personal life, compromising psychological, physical and social aspects of the worker.¹ In the context of public safety, the intensification of violence has demanded a more effective police corporation, so that the police profession requires commitment and dedication, which can lead to physical and emotional exhaustion, predisposing workers to various pathologies.² Factors such as stress, exhaustive work routine, sleep deprivation and neglect of oral and systemic health, interfere in the quality of life of workers, worsening the health conditions of these professionals.³

Oral health conditions can negatively affect the quality of life of individuals and affect their productive activity.⁴ Oral changes may trigger painful stimuli or psychological and emotional changes impairing

quality of working life and interpersonal relationships.⁵ Therefore, it is important to maintain a high level of oral health fitness among police officers in order to avoid disruptions to the readiness and operational ability of combat units.⁶

Temporomandibular disorders (TMD) and dental caries are important indicators of oral health that have an impact on quality of life.^{7,8} TMD has a multifactorial etiology, incorporating aspects related to dental occlusion, as well as general elements such as emotional and psychological factors.^{9,10} This disorder is considered a pathological condition characterized by different signs and symptoms. Mechanical pain associated with cracking, headache and stiffening are the main signs and symptoms of TMD and may directly or indirectly affect quality of working life.¹¹

In view of the above, this article aimed to evaluate the association between oral conditions and quality of working life of Brazilian police officers.

MATERIALS AND METHODS.

Study Design and Sample

This cross-sectional study was developed at the 10th Military Police Battalion of Paraíba, located in the city of Campina Grande, Brazil. The non-probabilistic sample consisted of 52 police officers of both sexes aged 25-60 years in active full-time performance of their work activities.

Data Collection

Clinical examination was performed by a single calibrated investigator under artificial lighting, using an artificial headlight (Petzl America, Clearfield, UT, USA), with sterile probes and mouth mirrors.¹²

The following information was recorded: sex, age, length of service, occurrence of dental caries, presence and degree of temporomandibular disorder and quality of working life.

The presence of caries was assessed using the DMFT index according to parameters of the WHO,¹² while TMD was classified into four grades: no disorder (score 0-15), mild disorder (score 20-40), moderate disorder (score 45-65) and severe disorder (score 70-100).^{13,14} At the end of the session, 10% of the sample was reexamined to assess intra-examiner reliability.

Quality of working life was analyzed through the WHO Quality of Life-BREF (WHOQOL-BREF), which was completed by participants in order to assess the level of satisfaction in their work environment. A trained person was present to explain how to complete the questionnaires.

The quality of life indicators were divided into four domains (physical/health, psychological, personal and professional), divided into 20 questions with five evaluation scales: Very Unsatisfactory (0-20), Unsatisfactory (20-40), Neutral (40-60), Satisfactory (60-80), Very Satisfactory (80-100), whose responses were completed considering the last two weeks of work.¹³ A trained person was present to explain how to complete the questionnaires.

Ethical Aspects

The study was approved by the Ethics Research Committee of the State University of Paraíba with Protocol No. 1.505.575. All participants signed the Informed Consent Term.

Statistical Analysis

Data were analyzed through the Statistical Package for the Social Sciences software, version 18.0 (IBM, Chicago, IL, USA). Descriptive analysis included the distribution of frequencies, mean, median and standard deviation. Bivariate analyses were performed through the Chi-square test, and 5% significance level was adopted. The "Quality of Working Life" variable was dichotomized, being classified as (1) "unsatisfactory", those who showed "very unsatisfactory", "unsatisfactory" or "neutral" results; and (2) "satisfactory", for those that demonstrated "satisfactory" or "very satisfactory" results.

RESULTS.

The intra-examiner reliability was very good, with intra-class correlation of 0.8 for DMFT and TMD scores. The sample predominantly consisted of men (94.2%), with a mean age of 39.4 years (± 9.9) and average length of service in the military police of 17.3 years (± 11.0).

The prevalence of caries was 53.8%, with 53.6% of police officers presenting one element and maximum of five decayed teeth (3.6%). Regarding the number of missing teeth, a single individual had 20 missing teeth. The most frequently lost teeth were 14, 16, 27 and 36, with 6.3% each. The mean DMFT index was 15.6 (± 6.1),

especially the "filled" component, whose mean was 12.1 teeth (± 5.4) (Table 1).

The occurrence of TMD was verified in 67.3% of the sample, with a predominance of mild degree (91.4%) (Table 2).

Regarding QWL, it was observed that 1.9% classified QWL as unsatisfactory, 55.8% as neutral, 30.8% as

satisfactory and only 11.5% as very satisfactory. When dichotomizing this variable, it was found that 57.7% of police officers classified QWL as unsatisfactory and 42.3% as satisfactory. There was a statistically significant association between QWL and TMD ($p < 0.05$). However, there was no association between TMD and dental caries ($p = 0.20$) (Table 3).

Table 1. Sample characterization for the components of the DMFT index.

Components	Minimum Value	Maximum Value	Mean	Median	Standard Deviation
Decayed	0	5	0.9	1.00	± 1.1
Missing	0	20	2.5	0.50	± 4.3
Filled	0	27	12.1	12.0	± 5.4
DMFT	1	27	15.6	15.0	± 6.1

DMFT: Decayed, missing, filled teeth.

Table 2. Sample characterization according to the occurrence and degree of TMD.

Variables		N	%
TMD [52]	Presence	35	67.3
	Absence	17	32.7
TMD Grade [35]	Mild	32	91.4
	Moderate	3	8.6

TMD: Temporomandibular disorder.

Table 3. Association between presence of TMD and QWL and DMFT.

Variables		Presence		Absence		p-value
		n	%	n	%	
Quality of Working Life	Satisfactory	11	50.0	11	50.0	0.02
	Unsatisfactory	24	80.0	6	20.0	
DMFT	< 15	16	59.3	11	40.7	0.20
	≥ 15	19	76.0	6	24.0	

TMD: Temporomandibular disorder. QWL: Quality of working life. DMFT: Decayed, missing, filled teeth.

DISCUSSION.

This research was carried out with a specific population group, military policemen of both sexes, using instruments validated and widely recognized in the literature to evaluate the presence of oral diseases (dental caries and TMD), as well as the quality of working life.

In Brazil, studies on the health of military police officers are infrequent due to the organizational principles regarding hierarchy and discipline typical of the institution. This fact can often interfere with the researcher's accessibility to the institution and also cause fear in the subjects surveyed

towards their superiors.¹⁵

In this study, it was verified that the majority of military police officers are male. The same trend of male dominance in military research has been reported in the literature, with variation only in terms of age.^{1,3,15-21} It is important to observe that in Brazil, even with the inclusion of women in the military police, the profession is still considered predominantly male,²² since women became part of the Military Police not as a response to a social demand, but due to the institution's own motivation.²³

It was observed that participants have been serving in

the force for a long time (average of 17.3 years), a result similar to those described by other Brazilian authors, who found that more than one third of military police officers have been in service for 21-30 years.^{15,19,20}

In this study, a high DMFT index was observed, with mean of 15.6 affected teeth, especially the filled component, evidencing a past experience of dental caries. Previous studies have shown similar results, with mean DMFT index ranging from 7.1 among Australian Army recruits,²⁴ 7.3 among Croatian police officers²⁵ and 10.3 among Hungarian police officers.¹⁷ Regarding the need for treatment, some authors have shown that 53.1% of participants needed dental treatment.¹⁸ Recent research on Thai police officers revealed that 50% admitted that they had oral problems during the previous six months and the most common were toothache/hypersensitivity (32.4%), and dental caries (21.5%).²⁶ The retainment of teeth throughout life also contributes to adequate nutrition, self-esteem, and social life.²⁷⁻²⁹

The use of simplified indexes in epidemiological population-based studies should be considered in a more judicious manner, requiring additional validation studies with larger samples. In both cases, simplification may represent a reduction in examination time and operating costs, with no apparent loss in quality results.³⁰

For the diagnosis of TMD this study used the Fonseca Anamnesis Index, which is based on Helkimo's Anamnesis Index, representing one of the few instruments available in Portuguese that evaluates and classifies the severity of TMD symptoms.¹³ This questionnaire allows the gathering of a great amount of information in an efficient way, presenting a low cost of application and easy perception for the evaluated individuals, not influencing the researcher when obtaining responses.³¹

In the present study, a high incidence of TMD was observed, with predominance of mild TMD. Although few studies on temporomandibular disorders in military police officers have been found,^{16,32} the results are in agreement with the findings described here, with reported prevalence of TMD ranging from 49.7%¹⁶ to 55.8%.³² In the case of the Military Police profession, some authors affirm that this is a high-risk activity, being among the professionals who suffer the most from stress due to the daily dealings with violence, death and brutality.³² The

issue of hierarchy as a factor that generates stress stands out in soldiers as well as in police officers, in health service officers or operational units.²²

In this research, it was verified that military police officers characterized their quality of life at work as neutral/unsatisfactory. Likewise, other studies have also found that these professionals tend to indicate dissatisfaction in their work activities.^{15,20} Because it is a military institution, where the division of tasks and labor relations sometimes involves authoritarianism and subordination, some police officers may feel apprehensive when answering questionnaires concerning quality of working life, a fact that may explain a tendency towards neutrality of the variable in this research.

A statistically significant association was found between quality of working life and presence of TMD. Although no recent studies comparing QWL with TMD have been found, previous research revealed the occurrence of a high degree of stress in the Brazilian military police, with correlation between stress and TMD.³¹ In Thailand, 64.4% of military personnel reported that their oral problems affected their quality of life and disturbed their duties.²⁶ In addition, the development or exacerbation of oral disease during deployment may compromise missions and may result in a substantial financial burden.³³

This study presents some limitations, among them the type of design (cross-sectional) and the reduced number of participants. However, due to the low number of studies in the dental literature, it is important to highlight the relevance of this research in this population group, since the current findings provide an overview of the oral health of Brazilian military police officers, and can be used as a basis for the planning of new strategies, encouraging the evaluation of health care systems. It is important to note that other oral conditions such as dental trauma and periodontal diseases were not evaluated. Police officers can have a significant prevalence of dental trauma and shift work may also be associated with gingival outcomes and bruxism stress.

The results confirm the need for specialized attention to the oral health of police officers, suggesting the implementation of informative and educational programs for oral health promotion and disease prevention. In

addition, longitudinal studies should be carried out, making it possible to verify cause and effect relationships with regard to oral disorders and their interference with quality of working life. Oral hygiene, behavioral habits and social factors should be observed in future studies, as they influence oral health.^{17,34} Thus, preventive measures should include introducing a range of health-promoting policies that take into consideration health (and oral health) impacts of daily activities.⁶

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CONCLUSION.

Although military police officers presented a high mean DMFT index value, there was greater participation of the filled component, showing a past experience of caries and evidencing that this population has access to oral health services.

The occurrence of TMD was high, with a predominance of mild degree, with association with quality of working life.

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