New York City College of Technology

Oral and dental considerations of combat-induced PTSD: a descriptive study

Kevin Chen

DEN 1200 D200

Professor Matthews

4/22/2022

**Summary of the article**

 Nirit Tagger-Green, Carlos Nemcovsky, Natan Gadoth et al. conducted a retrospective cohort pilot study to examine the oral and facial manifestations in 71 Israeli veterans with combat PTSD. The study took place in Israel and this article was published in the *Quintessence International* in August 2020 (<https://pubmed.ncbi.nlm.nih.gov/32577706/>).

 The 71 participants in this study were diagnosed with at least 10 years of combat-induced PTSD and meets the criteria according to the Diagnostic and Statistical Manual of Mental Disorder, 4th edition. The patients were referred to the senior author’s (Nirit Tagger-Green) periodontic office for further examination. Between 2014 – 2018 each participant filled a medical and sociodemographic questionnaire. An intraoral and extraoral examination was conducted afterwards to determine the patient’s dental status and data was collected for analysis to determine if there is a correlation between combat-induced PTSD and oral/facial manifestations. The *P* value had to be <.05 to be considered clinically significant.

 The authors concluded that veterans with combat-induced PTSD may suffer from poor oral hygiene followed by periodontal disease. Out of all 71 participants with PTSD, each participant had some form of periodontal disease.

**Article information**

The title of this article is called, “Oral and dental considerations of combat-induced PTSD: a descriptive study.” The authors of the study are Nirit Tagger-Green, Carlos Nemcovsky, Natan Gadoth et al. This article was published by *Quintessence Publishing* and the name of the journal is called *Quintessence International.* The online link to the journal page can be found here: (<https://www.quintessence-publishing.com/deu/en/article/841341/quintessence-international/2020/08/oral-and-dental-considerations-of-combat-induced-ptsd-a-descriptive-study>). The journal was published in August 2020 and the study’s link on PubMed is provided here: (<https://pubmed.ncbi.nlm.nih.gov/32577706/>). In the article, the authors declared that there were no conflicts of interests or declaration of fundings.

**Study analysis:**

1. **Type of study**

This is considered a cohort study because it follows a cohort of individuals who have combat-induced PTSD and evaluating the condition’s association with oral and facial manifestations. The exact location of the study remains unknown, but every patient was referred to the same periodontist’s office in Israel starting from 2014 to 2018.

1. **Study purpose**

Studies on patients with PTSD and their dental status are scarce. There has only been reports and speculations that veterans with PTSD have poor oral hygiene and periodontal diseases. Some studies do show that PTSD has been known to possibly cause various medical conditions such as diabetes, sleep disorders, and migraines. But because studies on individuals with PTSD and the association with their dental status was rather limited, the authors conducted this retrospective cohort pilot study to evaluate the dental, oral, periodontal, and bruxism manifestations among combat-induced PTSD Israeli veterans.

1. **Experimental design**

The study group consisted of 71 Israeli veterans who were diagnosed as combat-induced PTSD for at least 10 years, and according to the Diagnostic and Statistical Manual of Mental Disorder, 4th edition, each participant met the criteria for PTSD. Furthermore, all 71 veterans were referred for periodontal treatment because of their active periodontal diseases. For this study, there was no control group. The whole process and evaluation revolved only around the 71 cohort of individuals with combat-induced PTSD.

The article did not give a specific time on when the study initiated but it did mention that data was collected from 2014 to 2018. The most valid time frame for the observations would have to be between 2018, when the study was approved by the IRB, to 2020, when the article was finalized and published.

The researchers evaluated several oral and dental considerations for all the participants. A medical and sociodemographic questionnaire was first given to fill out followed by an intraoral examination and an extraoral examination. The questionnaire contained questions such as past medical history, medications, habits, and orofacial pain they may be experiencing. For the intraoral examination, probing depths on the entire dentition was taken, examination of hard and soft tissue pathology, noting signs of wear and abfractions, along with plaque index scores, and DMFT scores. Extraoral examination consisted of asking if the patient experiences any facial pain or tenderness then the examiner performs a pain to palpation on the TMJ for each patient.

 After collecting all the data, the researchers used the SPSS 20.0 statistical analysis software (IBM). In the software, the chi-square test and Fisher exact test were used for two categorical variables that may have an association with each other. A *t* test was used to examine the comparison of two different independent groups, while the ANOVA analysis compares the differences of two or more independent variables. For an analysis to be clinically significant a two-sided *P* value of <.05 was implemented.

The examiner was the senior author of this article. All the procedures, orofacial and dental results were collected by [NTG] over the span of four years, from 2014 – 2018. Therefore, no calibration can be determined.

1. **Results**

In the results section of the article, the researchers found that 44 of the 71 participants do not smoke, while the rest (22 (31%) for heavy, 4 (5.6%) for light, and 4 (5.6%) for former) are, or were, smokers. The *P* value between smoking and periodontal disease was a 0.012, indicative of a significant positive correlation. The researchers also found from their observation that out of the 71 individuals, 64 patients (90.1%) were indicative of parafunctional habits. 33 had wear facets and 43 (60.6%) of the patients had to use night guards mainly because of TMJ pain or facial pain. All 71 patients had periodontal disease with 50 (70.4%) of them having localized and the remaining 21 (29.6) having generalized. There was also a significant correlation (*P*=.035) between parafunctional activity and the severance of periodontal disease. However, there was no significant correlation between the age and the severity of periodontal disease. For the plaque index, the results were distributed across the board with values 0.8 – 1.0 (70.4%) being the most prevalent. As for DMFT scores, tooth fillings (F) had the highest value (59.6%). While there was no correlation between DMFT scores and parafunctional activity, the severity of periodontal disease and DMFT scores had a positive correlation. Lastly, the *P* value between light smokers and DMFT scores was 0.012 which indicates that there is a direct correlation.

1. **Conclusions**

The authors concluded that individuals who have combat-induced PTSD may suffer from poor oral hygiene followed by periodontal disease. This is important because the authors also stated that a previous study established a connection between periodontitis and atherosclerotic vascular disease. Due to the high prevalence of periodontal disease in the current study and taking into consideration of the other comorbidities caused by PTSD, it is suggested that treating or preventing periodontitis may reduce the risk of acquiring adverse cardiovascular events. Furthermore, in this large group of combat-induced PTSD patients with periodontal disease, a pronounced rate of severe periodontitis and indications of parafunction were detected. So knowing the special oral health needs for these patients can significantly reduce migraines and assist their quality of life.

The author does not explicitly state it in the article, but they did mention that there is a disagreement on whether traumatic occlusal forces may lead to periodontal attachment loss. It was also noted that there were no studies on the prevalence of mandibular or palatal tori in the general Israeli population. But the actual study itself has been concluded and determined by the authors. A possible revaluation of the same study may be possible due to the limitations. The limitations of the study are the following: relatively small sample size, lacking a control group, and required further studies using the Electromyography (EMG) for more accurate TMD diagnosis.

1. **Your impression**

This study is important to the field of dental hygiene. Our job is to help promote good oral care and prevent periodontal diseases from occurring in the first place. This study showed that out of the 71 participants with combat-induced PTSD each one of them had poor oral hygiene and periodontal disease. There is an abundance of individuals who suffer from PTSD across the world, and they don’t have be war veterans, nor is this occurrence just in Israel. As mentioned by the authors, PTSD patients may be at risk of a variety of medical conditions and now that periodontitis can also be added to the list, that does not make matters any better. It is best for dental professionals to be very meticulous when operating on a patient with PTSD due to the possible medical conditions they may have along with possible periodontitis and all its’ adverse effects. For these patients it is best to treat them or offer treatment as soon as possible, then provide strict oral hygiene instructions.

I would like to know if some of the participants in this study neglect oral hygiene care because of sounds or feelings. Normally, this psychological disorder is triggered by a stimulus. It would be interesting to know, for example, if the vibrations from an electronic toothbrush or the sound of brushing affects the way they brush or prevents them from cleaning their teeth at all. That could also be an important factor in contributing to periodontal disease.

Works Cited

Tagger-Green, N., Nemcovsky, C., Gadoth, N., Cohen, O., & Kolerman, R. (2020). Oral and dental considerations of combat-induced PTSD: a descriptive study. *Quintessence international (Berlin, Germany : 1985)*, *51*(8), 678–685. https://doi.org/10.3290/j.qi.a44809