

FOI BEM CORRIGIDO

Medication history in Craniomandibular Disorders and bruxing behavior subjects with Tension-Type Headache and different scores in dissociation.

Omar Franklin Molina¹

¹UNIRG University School of Dentistry Orofacial Pain Unit Gurupi-TO, Brazil

Email Address: omarfranklinmolina1970@Gmail.com

Abstract

Introduction: Excessive use of medication in headache patients is a complex behavior associated with a number of factors including intensity, frequency, chronicity of pain, addiction, and psychological/psychiatric disorders. There is a paucity of studies about this relationship. **Goal:** Evaluate scores in depression, medication use, and chronicity in subjects with Craniomandibular Disorders and dissociation and in subjects without. **Methods:** Medical records from subjects referred consecutively to an Orofacial Pain facility were retrospectively retrieved and examined. Subjects were allocated to subgroups with Craniomandibular Disorders and no headache (n=45), Craniomandibular Disorders, tension-type headache and low (n=38), intermediate (n=36) and high scores in dissociation (n=33). In a second stage, scores in dissociation, use of medication and chronicity of tension-type headache were evaluated. Information about dissociation and depression was gathered using the Bernstein-Putnam and the Beck Depression Inventory, respectively. Data were analyzed using Kruskal-Wallis and Dunn' statistics. **Outcome:** Means in depression in the Craniomandibular Disorders no Tension-type headache, Craniomandibular Disorders + Tension-type headache 0-15 scores in dissociation, Craniomandibular Disorders + Tension-type headache 16-29 scores in dissociation and Craniomandibular Disorders + Tension - type headache 30 or higher scores in dissociation were 5,3 (SD=4,4, range=0-14); 7,5 (SD=4,9, range=0-17); 10,0 (SD=6,3, range=0-25); 16,8 (SD=5,2, range=7-30), respectively. Kruskal-Wallis statistics (p<0,0001): Craniomandibular Disorders No tension-type headache versus Craniomandibular Disorders + Tension-type headache + 16-29 scores in dissociation (p<0,01); Craniomandibular Disorders no Tension-type headache versus Craniomandibular Disorders + Tension-type headache + 30 or higher scores in dissociation (p<0,001); Craniomandibular Disorders + Tension-type headache + 0-15 scores in Dissociation versus Craniomandibular Disorders + Tension-type headache + 30 or higher scores in Dissociation (p<0,001); Craniomandibular Disorders + Tension-type headache + 16-29 scores in dissociation versus Craniomandibular Disorders + Tension-type headache + 30 or higher scores in dissociation (p<0,01). Regarding medication use means are described as follows: Craniomandibular Disorders no Headache (mean=1,70, SD=1,5, range=0-5); CMDs + Tension-type headache + 0-15 means in dissociation (mean=3,0, SD=1,6, range=0-6); Craniomandibular Disorders + Tension-type headache + 16-29 scores in dissociation (mean=3,3, SD=2,0, range=1-10); CMDs + Tension-type headache + 30 or higher scores in dissociation (mean=4,6, SD=1,8, range=2-7). Kruskal-Wallis statistics (p<0,0001): Craniomandibular Disorders no Tension-type headache versus Craniomandibular Disorders + Tension-type headache + 0-15 scores in dissociation (p<0,05); Craniomandibular Disorders No Tension-type headache versus Craniomandibular Disorders + Tension-type headache + 16-29 scores in Dissociation (p<0,05); Craniomandibular Disorders + No Tension-type headache versus Craniomandibular Disorders + Tension-type headache + 30 or higher scores in Dissociation (p<0,001). There was no statistically and significant differences when all the three subgroups with Tension-type headache were compared (one versus the other) regarding current or past amount of medication reported by subjects. In other words, statistically significant differences in current/past use of medication were found only in the comparison of any of those subgroups with headache versus the subgroup with no headache. This was so, as the subgroup with no headache reported use of medication related to facial, temporomandibular joint and cervical pain. Regarding chronicity of Tension-type headache in the three subgroups with information about dissociation: Craniomandibular Disorders + Tension-type headache + 0-15 scores in dissociation (mean=4,1, SD=2,9, range=1-10); Craniomandibular Disorders + Tension-type headache + 16-29 scores in dissociation (mean=4,3, SD=3,9, range=1-15); Craniomandibular Disorders + Tension-type headache + 30 or higher scores in dissociation (mean=6,0, SD=4,6, range=2-20). There was a statistically and significant difference when the subgroups were compared (Kruskal-Wallis statistics p=0,02): Craniomandibular Disorders + Tension-type headache + 16-29 scores in dissociation versus

*Craniomandibular Disorders + Tension-type headache + 30 or higher dissociation scores ($p < 0,05$). **Conclusion:** The Craniomandibular Disorders and Tension-type headache subgroup with 30 or higher scores in dissociation demonstrated the highest scores in dissociation, depression, use of different medications and chronicity of tension-type headache. **Key Words:** Craniomandibular Disorders. Tension-type headache. Depression. Dissociation. Medication use. Pain Duration. Corrigido tabelas também*

Date of Submission: 01-08-2022

Date of Acceptance: 14-08-2022

I. Introduction

Craniomandibular Disorders (CMDs) constitute common medical and dental terms used to describe a set of signs and symptoms occurring in the masticatory muscles, temporomandibular joints (TMJs) and/or adjacent anatomic structures usually of musculoskeletal origin, characterized by a complaint of pain, joint noises of different types, tenderness to palpation of the masticatory muscles and TMJs, and headache usually of musculoskeletal origin^[1]. **Bruxing behavior (BB)** is a complex oral and neurophysiological motor disorder which occurs both during the day (daytime BB), at night (sleep BB), or both (mixed BB) and is characterized by grinding, clenching, bracing, or gnashing the teeth with no functional purposes. Nocturnal BB is thought to occur during different stages of sleep^[2]. BB is currently considered as one of the most common pathological disorders responsible for a number of signs and symptoms in many components of the masticatory system^[3]. **Tension-type headache (TTH)** is the most prevalent form of head pain and is observed and diagnosed frequently in the fields of Neurology, CMDs and Orofacial Pain. TTH is described by patients as a dull, aching pain occurring bilaterally in the cervical, frontal and temporal region, sometimes associated with nausea and rarely with vomiting. TTH is a dull aching pain associated with myofascial trigger points in the cervical structures and some patients establish a connection between pain in the anterior part of the head and pain and tension in the cervical region. Because TTH is not as incapacitating as migraine, many TTH subjects do not seek medical attention^[4] and treat themselves using over-the counter medication including common analgesics and muscle relaxants. TTH is clinically more important in diagnostic and therapeutic terms when becomes more chronic, has a significant comorbidity and has an indirect impact, which adds to the burden of the disease^[5].

Dissociation is the current term used to describe a group of conditions characterized by a disruption in the integrated functions of consciousness, memory and perception^[6]. Dissociative disorders (DID) consist of a complex set of psychiatric symptoms that are severe and disabling, resulting in high utilization of community medical, psychological and psychiatric resources^[7]. DID do not occur rarely in the medical and or psychiatric setting. However, signs and symptoms are displayed subtly and thus, their diagnosis is very difficult even for those specialists in the field. Because of its clinical characteristics, diagnostic and treatment difficulties, migraine has been studied more extensively as compared to TTH. This is especially true regarding psychological and psychiatric aspects of migraine. While there is substantial information about the association of TTH with depression, little is known about the relationship among dissociation, depression and TTH. There is a paucity of studies regarding the interrelationship of medication use with depression and dissociation. Consequently this investigation was undertaken to test the following hypothesis:

1. Because depression is closely interrelated with dissociation and somatization, higher scores in depression are expected to be observed in those TTH subjects with higher scores in dissociation.
2. Greater amounts of different medications are more frequently reported only in those TTH subjects with the highest scores in dissociation;
3. If dissociation, depression, and intake of larger amounts of medication are in some way related with difficulties to treat TTH, thus more chronic forms of TTH should be observed in those TTH subjects with higher scores in dissociation.

II. Methods

This study retrospectively evaluated clinical records of subjects referred consecutively over the last ten years to a facility specialized in the diagnosis and treatment of CMDs and Orofacial Pain at UNIRG University, Gurupi-TO, Brazil. Before initiating the investigation, subjects were examined comprehensively evaluating the characteristics of the chief complaint, assessing the type of headache, palpating masticatory muscles and TMJs, using clinical examination and questionnaires to evaluate presence of signs and symptoms of CMDs, biomechanical tests to determine the type of internal derangements of the TMJs (TMJs-ID), questionnaires, self-report and clinical examination to evaluate diurnal, nocturnal and mixed BB. Patterns of referred pain and presence of signs and symptoms of myofascial pain were also evaluated. Subjects were also asked about previous and current medication use to alleviate TMJ and headache pain. Finally, some psychological tests including the Taylor Manifest Anxiety Scale (TMAS), the Beck Depression Inventory (BDI), the Bernstein and Putnam self-reported instrument (DES) and other tests were conducted in order to gather data about anxiety,

depression and dissociation, respectively. The goal of this comprehensive approach was to organize a database with accurate clinical, behavioral (BB), psychological and epidemiological data so as to examine variables of interest in the near future. Once subjects were examined, they were classified as those with presence or absence of CMDs, BB, Dissociation, tension-type headache, migraine, combination headache, occipital neuralgia, myofascial headache and their clinical records were stored in a database in order to be available for future studies. Recently, clinical records of subjects presenting with CMDs, BB and no headache, CMDs, BB and 0-15 scores in dissociation, CMDs, BB and 16-29 scores in dissociation and those with 30 or higher scores in dissociation were consecutively retrieved so as to organize subgroups that could be compared regarding a variable of interest, for instance, depression. Once the clinical records from subjects with information about CMDs, BB, TTH, no headache and dissociation were examined, subjects were allocated to form the following subgroups: CMDs no TTH, CMDs + BB + TTH + 0-15 scores in dissociation, CMDs + BB + TTH + 16-29 scores in dissociation and CMDs + BB + TTH and 30 or higher scores in dissociation subgroups. We proceeded in such a way in order to compare variables of interest, for instance, scores in depression, scores in duration (years) of TTH and scores in amount of medication previously used or being used currently by subjects in different subgroups.

Inclusion criteria for CMDs: A complain of pain in the masticatory system, difficulties to perform jaw movements, presence of joint noises, seeking treatment for pain or CMD dysfunction, tenderness to palpation of the masticatory muscles and/or TMJs and presence of head pain referred from the masticatory muscles or TMJs.

Inclusion criteria for TTH: A complaint of bilateral head pain, pain described as dull, constant, usually mild or moderate and occasionally severe, nausea reported occasionally, bilateral pain described in the anterior part of the head correlated with pain and chronic tension in the cervical and sub-cervical structures, presence of cervical or sub-cervical trigger points associated with referred pain to the anterior part of the head.

Exclusion criteria: Subjects presenting with psychological/psychiatric and/or cognitive disorders, those presenting with some form of epilepsy, including Parkinson disease and those with severe motor and/or cognitive difficulties unable to respond properly to questionnaires were excluded from the studies. Clinical records with incomplete data were not filed in the database, and thus, were not included in the current investigation.

III. Measures

The Beck Depression Inventory (BDI)^[8] is a robust and reliable psychological instrument used worldwide to gather information about depression. The instrument consists of 21 self-reported groups of four statements associated with absence or presence of depression and graded from normality to greater severity assessing recent depressive symptoms. Typically, the subject is able to respond in 15-20 minutes to the items of the self-reported questionnaire. The Dissociative Experience Scale (DES)^[9], is a self-reported questionnaire with twenty-eight questions about experiences that any individual may have in the daily life. Using a 0% to 100% scale, the instrument evaluates how often some dissociative experiences occur in a certain individual. The individual is instructed to carefully read the questions and select the number that best describes the frequency of the experience. In the current investigation and based in the instruction from Bernstein and Putnam^[9], those individuals demonstrating a score of 30 or higher were included in the subgroup presenting CMDs, BB, TTH and dissociation. CORRIGIDO

IV. Statistical Analysis

Kruskal-Wallis and Dunn´ statistics were used to analyze data when more than two groups were compared. Significance was accepted if $p < 0,05$.

V. Outcome

This investigation evaluated a subset of CMDs, BB and no TTH (CMDs + BB No TTH, $n=45$), a subset of CMDs, BB, TTH and 0-15 scores in dissociation (CMDs + BB + TTH + 0-15, $n=38$), another subset of CMDs, BB, TTH and 16-29 scores in dissociation (CMDs + BB + TTH + 16-29, $n=36$) and a subset of CMDs, BB and 30 or higher scores in dissociation (CMDs + BB + TTH + 30 or higher $n=33$). The independent variables to be investigated were as follows: scores in depression, scores in medication use and chronicity of TTH in the aforementioned subgroups. Mean age in each subgroup is explained as follows: CMDs + BB No HA (mean=31,4, SD=10, range=18-57); CMDs + BB + TTH + 0-15 scores in dissociation (mean=30,4, SD=12,6, range=17-57); CMDs + BB + TTH + 16-29 scores in dissociation (mean=29,7, SD=11,5, range=15-66); CMDs + BB + TTH + 30 or higher scores in dissociation (mean=28,1, SD=10,7, range=18-57). Age was not statistically different when the subgroups were compared (Kruskal-Wallis statistics $p=0,17$). Basic statistics in depression is described as follows: CMDs + BB No TTH (mean=5,3 SD=4,4, range=0-14); CMDs + BB + TTH + 0-15 scores in dissociation (mean=7,5, SD=4,9, range=0-17); CMDs + BB + TTH + 16-29 scores in dissociation (mean=10,0, SD=6,3, range=0-25); CMDs + BB + TTH + 30 or higher scores in dissociation

(mean=16,8, SD= 5,2, range=7—30). There was a statistically significant difference when scores in depression were compared in the four subgroups (Kruskal-Wallis statistics with Dunn's $p<0,0001$): CMDs + BB No TTH versus CMDs + BB + TTH + 16-29 scores in dissociation ($p<0,01$); CMDs + BB No TTH versus CMDs + BB+ TTH + 30 or higher scores in dissociation ($p<0,001$); CMDs + BB + TTH + 0-15 scores in dissociation versus CMDs + BB + TTH + 30 or higher scores in dissociation ($p<0,001$); CMDs + BB + TTH + 16-29 scores in dissociation versus CMDs + BB + TTH + 30 or higher scores in dissociation ($p<0,01$).

Corrigido ok

Regarding medication use data on basic statistics is described as follows: CMDs + BB No TTH (mean=1,70, SD=1,5, range=0-5); CMDs + BB + TTH + 0-15 scores in dissociation (mean=3,0, SD=1,6, range=0-6), CMDs + BB + TTH + 16-29 scores in dissociation (mean=3,3, SD=2,0, range=1-10); CMDs + BB + TTH + 30 or higher scores in dissociation (mean=4,6, SD=1,8, range=2,7). There was a statistically significant difference when the amount of current or past use of medication was compared in the different subgroups (Kruskal-Wallis statistics $p<0,0001$): CMDs + BB No TTH versus CMDs + BB + TTH + 0-15 scores in dissociation ($p<0,05$); CMDs + BB No TTH versus CMDs + BB + TTH + 16-29 scores in dissociation ($p<0,05$); CMDs + BB No TTHA versus CMDs + BB + TTH + 30 or higher scores in dissociation ($p<0,001$). There was no statistically and significant difference when all the three subgroups with TTH were compared regarding the current or past amount of medication reported by subjects. In other words statistical significant differences in current or past use of medication were found only in the comparison of any of the subgroups with TTH versus the subgroup with no headache. Further, subjects in the subgroup with TTH reported use of medication associated with facial, TMJ or neck pain rather than with TTH.

Regarding chronicity of TTH when comparing duration of TTH in the three subgroups with TTH: CMDs + BB + 0-15 dissociation scores (Mean=4,1, SD= 2,9, range=1-10); CMDs + BB + TTH + 16-29 dissociation scores (mean=4,3, SD=3,9, range=1-15); CMDs + BB + TTH + 30 or higher dissociation scores (mean=6,0, SD=4,6, range=2-20). There was a statistically and significant difference when the subgroups were compared (Kruskal-Wallis statistics with Dunn's $p=0,02$): CMDs + BB + TTH + 16-29 dissociation scores versus CMDs + BB + TTH + 30 or higher dissociation scores ($p<0,05$). **CORRIGIDO**

VI. Discussion

Higher scores in depression were observed in those with higher scores in dissociation.

In the current investigation, the highest scores in depression were observed only in those subjects with dissociation scores of 30 or higher. Scores in depression increased linearly with higher scores in dissociation in the corresponding subgroups. Even though a correlation test was not carried out, this linear increase in depression with greater scores in dissociation probably means that depression and dissociation are closely interrelated and that the presence of concomitant psychiatric disorders in those with higher scores in dissociation inflates scores in depression. Further studies are needed to provide more insight about this relationships. The outcome and previous assumptions in the current investigation are in part in line with one investigation^[10] reporting that "compared to healthy controls, chronic and episodic TTH subjects showed significantly higher scores in neuroticism, anxiety and depression". Such investigation also indicated that dissociation is a very severe psychiatric disorder and that in the general sample of subjects with TTH, an abnormal personality was correlated with depressive mood. Very likely, depression is an important factor in the perpetuation of TTH as depression, anxiety, intensity and frequency of pain experience are interrelated^[10]. Because the highest scores in depression were observed in those with the highest scores in dissociation, the outcome of the current investigation is echoed by one study^[11] evaluating 20 subjects with dissociation. Researchers reported that all patients in the group they evaluated had depressive symptoms which could be associated with dissociation or with other pathological personalities. Further, dissociative identity disorders (DID), are frequently associated with depressive disorders, anxiety, somatization, posttraumatic stress disorders, substance abuse and personality disorders^[12].

Evidence has been found explaining an association between TTH and migraine and psychiatric disorders including depression, anxiety and somatization. Additionally, patients with TTH have difficulties in expressing their emotions which most likely appear in the form of somatic symptoms^[13]. Migliore and associates^[14] evaluated a large sample of subjects with medication overuse headache compared to another group with no overuse. They reported high rates of depression and anxiety in the subgroup with medication overuse. Compared to other psychiatric disorders, dissociative disorders were associated with severe symptoms, depression, frequent suicide attempts, increased frequency of mental health disorders and a poorer response to conventional treatment^[12].

Data in the current study, show that the use of different medications increased from the CMDs and BB subgroup with no TTH to the subgroup with CMDs, BB, TTH and higher scores in dissociation. It is very difficult if not impossible to analyze the specific role of each behavioral, psychological or psychiatric factor increasing the use of medication. However, we may speculate that with time, pain becomes more severe, frequent and is associated with anxiety, depression, psychopathology, medication overuse and even with more chronic TTH. In line with these assumptions, one investigation^[15] indicates that frequent TTH is associated with a high consumption of over-the-counter analgesics and absenteeism and that gradual or abrupt medication overuse withdrawal is recommended in the treatment of drug abuse. Prolonged or frequent TTH, lack of medical care, significant psychopathology, emotional and physical dependence and pain intolerance are some factors that lead patients to medication overuse^[16]. Because TTH is usually not so intense as compared to other headache types, patients may not seek proper diagnosis and treatment and with time they may become addicted to use larger amounts of analgesics or shift to another analgesic or muscle relaxant type, thus contributing to chronification of TTH and medication overuse.

It may also be that dissociation and somatization, common disorders in chronic pain patients usually associated with multiple complaints also contribute to the use of greater amounts of medication. Supporting this assumption, one investigation^[17] asserts that headache is a common manifestation of dissociation and a review of 52 cases, reported that headache was the most frequent somatic complaint occurring in 60% of 52 clinical cases. Thus, both dissociation and somatization may contribute to the use of larger amounts of different medications including those for anxiety, depression and muscular tension. Dissociative disorders, chronic stress and somatization are both interconnected disturbances that may increase number of medical consultations and use of larger amounts of medication. In this regard, it has been reported that excessive use of medication and persistent stress in chronic TTH sufferers, is considered the main factor facilitating the progression and development of chronic headache^[18]. Dissociation is closely related with a history of childhood abuse and severe stress and many patients in the subgroups with the highest scores in dissociation reported use of antidepressants, benzodiazepines and over-the-counter analgesics and anti-inflammatory drugs. If we consider that dissociation is closely related with posttraumatic stress disorder, the outcome in the current study is congruent with one research^[19] reporting that in the treatment of posttraumatic stress disorders, first line pharmacotherapy agents include venlafaxine, tricyclic antidepressants and benzodiazepines.

It may also be that the complexities of dissociative disorders, associated depression, anxiety, stress and other factors contributing to longer duration of pain, are responsible to some extent with greater use of medication of different types including antidepressants. Coherent with this point of view, one investigation^[20] in dissociative disorder patients indicates that patients with dissociative disorders tend to require longer term treatment because they are polysymptomatic and present with high levels of comorbid issues that require specialized intervention. Such subjects may present treatment resistant depression, anxiety, self-destructive behaviors and substance and alcohol abuse. In the current research, subjects with higher scores in dissociation showed a tendency for medication overuse as compared to those with lower scores in dissociation. In regard to this, one investigation^[21] asserts that there are many reasons why those with psychiatric disorders are often those overusing medication. Very likely many individuals with medication overuse are self-treating a comorbid disorder whereas others may have anxiety as an important component in their psychopathology. Thus, they are more likely to use barbiturates and benzodiazepines. Further, dysphoric individuals are more inclined to use opioids and those with hypersomnia and depression and various sleep disorders might overuse caffeine in their diet and medication^[21]. Additionally, one investigation^[22] indicates that dissociative disorders consist of a set of psychiatric symptoms that are severe and disabling, resulting in high utilization of community resources including consultations and medications. Migliore and associates^[14] examined a large sample of subjects with medication overuse headache compared to another group with no overuse and reported high rates of depression and anxiety in the subgroup with medication overuse. Behavioral and psychological factors certainly play a significant role in medication overuse. The sense of relief provided by the analgesic, has a rewarding effect upon the patient that encourages him/her to continue taking more and more analgesics. Consequently, rebound headache due to acute medication overuse develops^[23]. Findings in the current investigation are also echoed by another study^[24] reporting that non-responsiveness to psychopharmacological medications, the presence of somatic symptoms and headaches have been observed in individuals presenting with signs and symptoms of dissociation.

More chronic TTH was reported in the subgroup of subjects with the highest scores in dissociation.

Because longer duration of pain (chronicity) can be influenced by a number of factors including depression, psychiatric comorbidities, dissociation, medication overuse, more intense and frequent pain, misdiagnosis and even inadequate treatment (for instance, analgesics and muscle relaxants as the only mod of treatment), it makes sense to observe an association between longer duration of TTH, depression and greater use of medication, more specifically when the treatment of comorbid psychiatric disorders is disregarded. For

this reason any approach to manage pain in the presence of somatization and dissociation is very difficult when the need to approach the disorder using a multidisciplinary team is ignored. In line with these assumptions, Fishbain^[22], claims that chronic pain may be associated with dissociative disorders and that dissociation is not a rare disorder in patients with psychiatric disorders and chronic pain. Further, the incidence of headache in subjects with psychiatric disorders and dissociation is higher and more than 50% subjects diagnosed with dissociation complain of headache^[11]. Regarding psychological or psychiatric factors, the aforementioned assumptions in this study are strongly supported by one investigation^[18] reporting that “several factors are related with chronic headache development including abnormal profile of the personality, excessive stress and use of symptomatic medication and traumatic life events” .

Because in the current investigation we found that more chronic TTH was reported in the subgroup with the highest scores in dissociation, such outcome is congruent with one study^[11] reporting that chronic and severe headache was one of the most common complaints in a group of 20 subjects with dissociation and personality disorders. Further, in chronic TTH there is an association between depression and chronicity as amitriptyline, the tricyclic antidepressant drug is the first choice for the prophylactic treatment of chronic TTH^[21]. Data in the current investigation demonstrated that more chronic clinical cases of TTH were found in subjects with dissociative disorders. Even though chronic TTH is very different as compared to chronic migraine, one investigation^[25] reported that dissociative symptoms are found more frequently in patients with chronic migraine. Because dissociation is closely related to somatization, we can also state that more chronic TTH was observed in those subjects with higher scores in dissociation and somatization. Chronicity is a very complex construct that may be influenced by a number of factors including behavioral, psychological, pharmacological and personality. This assumption is coherent with one investigation^[14] assessing psychopathological comorbidities in subjects with medication overuse headache. Researchers stated that difficulties to regulate emotions (somatization) may play a central role in the behavior of patients with medication overuse headache. Their altered behaviors, more specifically their compelling necessity to use drugs, may contribute to more chronic head pain and to overuse of additional drugs available for them^[14].

Matthew and colleagues^[26] evaluated a sample of 200 patients who were taking daily symptomatic or immediate relief medications often in excessive quantities. They concluded that daily use of symptomatic or immediate relief medications results in chronic daily headache, and that discontinuation of daily use of such medications itself results in improvement of headache. Several risk factors are known to be associated with the transformation of an episodic into a chronic form of headache including medication overuse, frequency and intensity of headache, stressful life events and depression^[20] and 25% of patients with chronic headache can trace the cause of chronic daily headache to the overuse of acute medications^[20]. **Corrigido e melhorado**

References

- [1]. Kafas P, Dalabiras S, Handoon Z. Chronic temporomandibular joint dysfunction: an area of debate. *Hard Tissue* 2012; 10: 1-9.
- [2]. Bader G, Lavigne GJ. Sleep bruxism overview of an oromandibular sleep movement disorder. *Sleep Med Rev* 2000; 4: 27-43.
- [3]. Poveda RR, Bagan JV, Dias JM, Hernández BS, Jiménez SY. Review of temporomandibular joint pathology. Part I: Classification, epidemiology and risk factors. *Med Oral Patol Oral Cir Bucal* 2007; 12: 292-98.
- [4]. Green MW. Headache: Psychiatric aspects. *Neurol Clin* 2011; 29: 65-80.
- [5]. Lenaerts M, Burden of tension-type headache. *Curr Pain Headache Rep* 2006; 10: 459-62.
- [6]. Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition. Text Review. Washington, DC: Am Psychiatric Association, 2000.
- [7]. Coons PM. The dissociative disorders: rarely considered and underdiagnosed. *Psychiatr Clin North Am* 1998; 21: 637-48.
- [8]. Bernstein EM, Putnam FW. Development, reliability and validity of a dissociation scale. *J Nerve Ment Dis* 1986; 174: 727-35.
- [9]. Beck AT, Ward CH, Mendelson M, Mock JE, Erbaugh JK. An inventory for measuring depression. *Arch Gen Psychiatr* 1961; 4: 561-71.
- [10]. Cao M, Zhang S, Wang K, Wang Y, Wang W. Personality traits in migraine and tension-type headaches: A five – factor model study. *Psychopathology* 2002; 35: 254-58.
- [11]. Tutkun H, Yargic L, Sal V. Dissociative identity disorder: A clinical investigation of 20 cases in Turkey. *Dissociation* 1995; 103: 3-8.
- [12]. Gentile J, Dillon KS, Gillig PM. Psychotherapy and pharmacotherapy for patients with dissociative identity disorder. *Innovations Clin Neurosci* 2013; 10: 22-29.
- [13]. Torelli P, Abrignani G, Castellini P, Lambru G, Manzoni GC. Human psyche and headache: tension-type headache. *Neurol Sci* 2008; 29: 593-95.
- [14]. Migliore S, Paolucci M, Quintilliani L, Altamura C, Maffi S, D’Aurizio G et al. Psychopathological comorbidities and clinical variables in patients with medication overuse headache. *Frontiers Human Neurosci* 2020; 14:1-8.
- [15]. Reljia G, Grsanato A, Bratina A. Outcome of medication overuse after abrupt in-patient withdrawal. *Cephalalgia* 2006; 26: 589-95.
- [16]. Monteith TS, Oshinsky ML. Tension-type headache with medication overuse: Pathophysiology and clinical implications. *Curr pain Headache Rep* 2009; 13: 463-69.
- [17]. Packard RC, Brown F. Multiple headaches in a case of multiple personality disorder. *The Journal of Head and Face Pain* 1986; 26: 99-102.
- [18]. Galego JC, Moraes A, Cordeiro JA, Tognola WA. Chronic daily headache. *Arq Neuropsiquiatr* 2007; 65: 1126-29.
- [19]. Jeffreys M, Capehart B, Friedman MJ. Pharmacotherapy for posttraumatic stress disorder: Review with clinical applications. *JRRD* 2012; 49: 703-16.
- [20]. Perosa S, Leonard TC, Perosa LM, Torem M. A naturalistic study of treatment outcomes for patients with dissociative disorders. *Vistas* 2013; 2013: 1-15.

- [21]. Green MW. Headaches: Psychiatric aspects. *Neurol Clin* 2011; 29: 65-80.
- [22]. Fishbain DA, Cutler RB, Rosomoff HL, Rosomoff RS. Pain-determined dissociation episodes. *Pain Medicine* 2001; 2: 216-23.
- [23]. Bendtsen L, Evers S, Linde M, Mitsikostas DD, Sandrini G, Schoenen J. EFNS guidelines on the treatment of tension-type headache-report of an EFNS task force. *Eur J Neurol* 2010; 17: 1318-25.
- [24]. Fisher J. Dissociative phenomena in the everyday lives of trauma survivors. Paper presented at the Boston University Medical School Psychological Trauma, May 2001, p.1-22.
- [25]. Saçmacı H, Cengiz GF, Atkürk T. Impact of dissociative experiences in migraine and its close relationship with osmophobia. *Neurol Res* 2020; 42: 1-9.
- [26]. Matthew NT, Kurman R, Pérez F. Drug induced refractory headache: clinical features and management. *Headache* 1990; 30: 634-38.

Table 1: Social and demographic data in different subgroups: CMDs , BB No TTH (CMDs No TTH=45), CMDs + BB + TTH + 0-15 scores in dissociation (CMDs + TTH + 0-15=38), CMDs + BB + TTH + 16-29 scores in dissociation (CMDs + TTH + 16-29=36) and CMDs + BB + TTH + 30 or higher scores in dissociation (CMDs + TTH + 30 or higher=33).

	SUBGROUPS			
	CMDs No TTH n=45	CMDs+0-15 n=38	CMDs+16-29 n=36	CMDs+30 or Higher n=33
AGE				
Mean	31,4	30,4	29,7	28,1*
SD	10	12,6	11,5	10,7
Range	18—57	17—57	15--66	18—57
GENRE				
Females	40= 88,9%	37=97,4%	34=94,4%	31=93,9%
Males	5= 11,1%	1 =2,6%	2= 5,6%	2 =6,1%
TOTALS	45=100%	38=100%	36=100%	33=100%+

*Kruskal-Wallis statistics (p=0,17), a statistically non significant difference.

Table 2: Scores in Depression, past or current medication use and chronicity of TTH in subgroups of subjects with CMDs + BB + No TTH (CMDs No TTH=45), CMDs + BB + TTH and 0-15 scores in dissociation (CMDs + 0-15=38), CMDs + BB + TTH and 16-29 scores in dissociation (CMDs + 16-29=36) and CMDs + BB + TTH and 30 or higher scores in dissociation (CMDs + 30 or higher=33).

	CMDs No TTH n=45	CMDs +0-15 n=38	CMDs + 16-29 n=36	CMDs + 30/higher n=33
DEPRESSION				
Mean	5,3	7,5	10	16,8*
SD	4,4	4,9	6,3	5,2
Range	0--14	0--17	0--25	7—30
MEDICATION USE				
Mean	1,70	3,0	3,3	4,6**
SD	1,5	1,6	2,0	1,8
Range	0—5	0--6	1—10	2—7
PAIN DURATION				
Mean		4,1	4,3	6,0***
SD		2,9	3,9	4,6
Range		1—10	1-15	2-20

*Kruskal-Wallis statistics (p<0,0001): CMDs No TTH versus CMDs + 16-29 scores in dissociation (p<0,01); CMDs no TTH versus CMDs + 30 or higher scores in dissociation (p<0,001); CMDs + 0-15 versus CMDs + 30 or higher scores in dissociation (p<0,001); CMDs + 16—29 versus CMDs + 30 or higher scores in dissociation (p<0,01).

** Kruskal-Wallis statistics (p<0,0001): CMDs No TTH versus CMDs + 0—15 scores in dissociation (p<0,05); CMDs No TTH versus CMDs + 16-29 scores in dissociation (p<0,05); CMDs no TTH versus CMDs + 30 or higher scores in dissociation (p<0,001).

*** Kruskal-Wallis statistics (p=0,02): CMDs + 16-29 scores in dissociation versus CMDs + 30 or higher scores in dissociation (p<0,05). **corrigido**