

Does sexual abuse contribute to more chronic headache?

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Abstract

Introduction: Occipital neuralgia is a common clinical and neurological disorder characterized by severe and refractory pain in the upper cervical structures radiating to the territory of the trigeminal nerve. Sexual abuse is a severe traumatic event which may cause severe pathological disorders including longer headache duration.

Goals: Test the hypothesis that Craniomandibular and headache subjects with a history of sexual abuse report pain of longer duration and that there is a linear and positive correlation between headache and sexual abuse.

Methods: Clinical evaluation, a set of questionnaires, well established clinical criteria for tension-type headache, migraine, myofascial headache and occipital neuralgia were used in 108 Craniomandibular Disorders and headache subjects to collect information about age, genre, type and duration of headache. The Trauma Abuse Scale was used to gather information about sexual abuse history. Those with headache and no sexual abuse (n=62) were compared to those with headache and sexual abuse (n=46) regarding duration of head pain. Data were evaluated using Kruskal-Wallis test, parametric unpaired t-test, Mann-Whitney statistics (nonparametric) and nonparametric Spearman Rank Correlation Coefficient. **Outcome:** Mean duration of pain in the Tension-Type Headache (n=30), Migraine (n=26), Myofascial headache (n=22) and occipital neuralgia subgroups (n=30), was about 5,5 years (SD=9,0, range=1–43); 6,1 (SD=6,4, range=1–25), 6,1 (SD=7,2, range=1–27) and 14,2 (SD=11,1, range=2–40), respectively. Kruskal-Wallis nonparametric statistics (p<0,0001), an extremely significant difference indicating that regarding duration of pain, the four subgroups were very different: Tension-type headache subgroup versus Migraine subgroup (p>0,05); Tension-type Headache subgroup versus Myofascial headache subgroup (p>0,05); Tension-type versus ON subgroup (p<0,001); Migraine versus Myofascial subgroup (p>0,05); Migraine versus Occipital neuralgia subgroup (p<0,01); Myofascial versus Occipital neuralgia subgroup (p<0,01). Mean duration of pain in the headache and no sexual abuse history was about 5,0 years (SD=5,3, range=0,5–25) as compared to 11,0 years (SD=11,0, range 1–40) in the headache and sexual abuse subgroup (Mann-Whitney statistics, p<0,001), a very significant difference indicating that pain was more chronic in those with headache and Sexual Abuse History. When a potential correlation between duration of headache and scores in sexual abuse was tested using nonparametric statistics, a positive and very significant correlation between these two variables was found (Spearman Rank Correlation Coefficient r=0,52, p<0,001) indicating that the relationship between duration of headache and scores in sexual abuse was straight, positive and very strong.

Conclusion: Subjects with occipital neuralgia were older and reported a longer duration of headache. Because headache subjects with a history of sexual abuse reported a headache that was longer in duration, in some way, related-sexual abuse mechanisms, contributes to longer duration of headache.

Keywords: Tension-type headache, Myofascial Headache. Migraine. Occipital Neuralgia. Sexual Abuse.

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I. Introduction

Craniomandibular Disorders (CMDs) are usually described as a “set of dental and medical conditions affecting the temporomandibular joints (TMJs), associated masticatory muscles and adjacent anatomic structures^[1]”, usually of musculoskeletal origin. CMDs are characterized by a complaint of pain, joint noises, tenderness to palpation of the TMJs and associated muscles, difficulties to perform normal jaw movements and headache of musculoskeletal origin^[2].

Orofacial Pain (OFP) is currently defined as a large set of pain disorders affecting the orofacial structures including muscles, TMJs, and contiguous tissue components^[1]. One substantial difference between

the denominations of TMDs and OFP is that in OFP, pain is not restricted to the musculoskeletal component as is the case in CMDs. Disorders of muscles, blood vessels, glands, joints, nerves and other tissues affecting the normal flow of information of the trigeminal system are included in the OFP domain.

Chronic headache is a common disorder in the general population and also among those in treatment in psychiatric facilities. It is generally accepted that the mutual progression of headache syndromes and psychiatric comorbidities interact to affect the overall quality of life of any individual^[3]. Tension-type headache (TTH) and Migraine (MIG), are very prevalent types of headache both in the general population and in those with “headaches” that for some individuals may be very disabling^[3]. However, other types of headache disorders including combination headache (CHA), myofascial headache (MYO HA) and occipital neuralgia (ON) are observed frequently in the clinical setting of clinicians involved in the diagnosis and treatment of headaches and OFP. The OFP specialist is also involved in the diagnosis and treatment of many headache disorders. Traumatic life events (TLE) are reported with some frequency by OFP patients and in some OFP patients with psychological or psychiatric disorders any type of headache may be disabling or incapacitating. Recent research demonstrates that in OFP and to a certain extent, the interaction between chronic OFP and headache may be mediated by TLE^[4].

The last few decades have witnessed enormous interest in the potential role of negative life events in the development of psychosomatic disorders including headache^[5] and OFP. Emotional, physical and sexual abuse history (SAH) constitute contributing and sometimes etiological factors in many pain disorders and these forms of abuse have encouraged an extensive field of research in psychology and social sciences. A history of physical, sexual and emotional abuse is frequently reported by many subgroups of pain sufferers including those with headache^[3,4]. A SAH can be reported with some frequency in OFP patients with CMDs^[6]. SAH may be reported by subjects with different types of chronic headache disorders^[3]. One must consider that in large populations of headache and/or OFP individuals, different types of headache may be reported by patients. Thus, there is the likelihood that some forms of abuse operating through different mechanisms influence psychological factors in some a way that pain becomes more chronic. These forms of abuse may be so qualitatively different that they have a different impact on headache. There is a paucity of studies regarding the role of some forms of abuse on duration of pain. Consequently, this investigation was carried out to:

1. Evaluate chronicity of headache in different headaches types including TTH, MIG, MYO-HA, headache with no SAH, and headache with SAH;
2. Test the hypothesis that because ON is a very intense, chronic and refractory headache disorder, pain in ON is described as more chronic by most ON sufferers;
3. Test the hypothesis that there is a positive and significant correlation between sexual abuse scores and headache duration;
4. Use the current literature to discuss how sexual abuse contributes to longer duration of headache pain in a selected subgroup of OFP and CMDs subjects with headache.

II. Material and Methods

Sample

We retrospectively reviewed the clinical records of subjects referred consecutively to the OFP Unit School of Dentistry University of Gurupi in the last 18 years. History of chief complaint, clinical examination, palpation of the TMJs and masticatory muscles, a set of questionnaires to diagnose bruxing behavior, biomechanical diagnostics tests for TMJ internal derangements, a questionnaire to diagnose type of headache, psychological tests to evaluate SAH, depression, anxiety, hostility, dissociation, and criteria to evaluate and diagnose TTH, MIG, MYO-HA and ON were used to gather data. Once subjects were evaluated, data were stored in a database but could be retrieved to gather scientific data for research purposes. We consecutively retrieved 30 medical records of subjects presenting characteristics of TTH (15 CMDs, TTH and no SAH and 15 with CMDs, TTH and SAH); 26 medical records of subjects with CMDs and MIG (15 with CMDs, MIG and no SAH and 11 with CMDs, MIG and SAH); 22 medical records of subjects with CMDs and MYOF HA (15 subjects with CMDs, MYO HA and no SAH and 7 subjects with CMDs, MYO HA and SAH); 30 medical records of subjects with CMDs and ON (15 medical records of subjects with CMDs, ON and no SAH and 15 medical records of subjects with CMDs, ON and SAH). Such medical records were used to evaluate age, relationships between SAH and duration of headache in subgroups categorized as those demonstrating CMDs and TTH (n=30), CMDs and MIG (n=26), CMDs and MYO HA (n=22), and CMDs and ON (n=30). As part of the study, subjects were also relocated to form subgroups presenting with CMDs, HA and SAH and CMDs, HA and no SAH.

Criteria for CMDs: A complain of pain in the masticatory muscles and/or TMJs, presence of joint noises (self-reported and examined clinically), difficulties to perform normal jaw movements, tenderness to palpation and headache of musculoskeletal origin.

Criteria for TTH: Pain described as bilateral, dull, constant, pressing or constricting, lasting hours or sometimes days, head pain reported in the temporal and, cervical and/or frontal regions. Pain associated with nausea and sometimes vomiting (the latter usually associated with longer duration of head pain), head pain usually described as mild, moderate (moderate more frequently than mild or severe) or severe^[7].

Criteria for MIG: Pain located in the temporal, frontal and or parietal regions, described as unilateral, severe, constant, long lasting, throbbing or pulsating, increasing with physical effort usually associated with nausea, vomiting and photophobia^[7].

Criteria for MYO HA: Pain occurring laterally in the occiput, parietal, temporal and or frontal regions described as dull, aching, constant without nausea or vomiting, usually associated with trigger points in the neck or cervical area but without signs or symptoms of migraine and /or occipital neuralgia.

Criteria for ON: Pain described as unilateral or bilateral, very severe, increasing suddenly, lancinating, burning, throbbing, shooting, jabbing, electric-shock-like, continuous or intermittent located in the upper cervical region radiating to the upper part, lower part or deep in the eye, temporal and or frontal region and sometimes to some teeth and associated with some aural symptoms, constriction and nasal secretion^[7].

Exclusion criteria: Subjects presenting with signs and symptoms of any type of the aforementioned headaches but presenting severe psychological or psychiatric disorders, cognitive impairment, excessive aggression, difficulties to respond properly to questionnaires, motor disorders associated with writing difficulties and those with epileptic disorders, were excluded from the study.

III. Measures

The Child Abuse and Trauma Scale^[8] was used in the current study to gather data about history of sexual, emotional and or physical abuse. This scale yields a quantitative index of the frequency and extent of various types of negative experiences in childhood and adolescence. In order to facilitate analysis and responses to questions and better quantitate the type of abuse, we organized questions in those related to sexual abuse, emotional abuse and physical abuse. In this scale positive responses to questions are organized in order of frequency: Never (0), rarely (1), occasionally (2), frequently (3) and always (4) so the researcher can quantitate the frequency and intensity of abuse.

IV. Statistical analysis

Basic statistics (mean, standard deviation and range), Kruskal-Wallis statistics to compare age and duration of headache in four different subgroups, unpaired t-test (parametric) to compare age differences in two subgroups with headache and history or no history of sexual abuse, Mann and Whitney statistics (nonparametric) to compare duration of pain in only two subgroups (those with headache and history or no history of sexual abuse) and Spearman Rank Correlation Coefficient (nonparametric) to evaluate the correlation between scores in sexual abuse and chronicity of headache, were used to analyze data in the current investigation.

V. Outcome

This investigation evaluated a subgroup of 30 subjects presenting with CMDs and **TTH**. There was only one male in this subgroup. Mean age was about 31,2 (SD=13,9, range 14—66). There were 15/30 subjects in this subgroup that reported SAH. We also assessed a subgroup of 26 female subjects with signs and symptoms of **migraine (MIG- HA subgroup)**. Mean age in this subgroup was about 34,0 (SD=11,3, range=20—66) and 11/26 subjects in this subgroup reported SAH. We also evaluated a subgroup of 22 subjects with clinical characteristics of **Myofascial Headache (MYO-HA)**, There was only 1/22 male subject in this subgroup. Mean age was about 33,3 (SD=10,2, range=14-65) and only 5 subjects reported SAH. Thirty subjects presenting with signs and symptoms of **unilateral or bilateral ON (ON subgroup)** were also evaluated. There was only one male in this subgroup. Mean age was about 40,1 (SD=11,6, range=18-75). There were 15/30 subjects in this subgroup that reported SAH. There was a statistically significant difference when age was compared in the four groups (Kruskal-Wallis statistics $p<0,0001$). However such difference was observed only in some groups: TTH versus MIG ($p>0,05$); TTH versus MIO HA ($p>0,05$): TTH versus ON ($p<0,001$); MIG versus MIO HA ($p>0,05$); MIG versus ON ($p<0,01$); MYO HA versus ON ($p<0,01$).

When all subjects presenting headache and no SAH ($n=62$) were evaluated as a separate group, mean age was about 36,8 (SD=12,9, range=14-75) as compared to 34,3 (SD=12,3, range=14-66) in the headache and SAH subgroup ($n=46$). Age was not statistically different when these two subgroups were compared (parametric Unpaired p t-test $p=0,26$).

Mean duration of pain in the four evaluated subgroups was as follows: TTH=5,5 years (SD=9,0, range=1—43); MIG=6,1 years (SD=6,4, range=1—25); MYO-HA=6,1 years (SD=7,2, range=1—27) and ON=14,2 years (SD=11,1, range=2—40). Kruskal-Wallis nonparametric statistics ($p<0,0001$), demonstrated that there was an extremely significant difference when chronicity of headache was compared in the four

subgroups: TTH versus MIG ($p>0,05$): TTH versus MYO HA ($p>0,05$): TTH versus ON ($p<0,001$), MIG versus MYO-HA ($p>0,05$): MIG versus ON ($p<0,01$): MYO HA versus ON ($p<0,01$). Mean duration of head pain in the headache and no SAH subgroup ($n=62$) was about 5,0 years ($SD= 5,3$, $range=0,5—25$) as compared with 11,0 years ($SD=11,0$, $range=1-40$) in the headache + SAH subgroup ($n=46$): Mann-Whitney statistics ($p<0,001$), a very significant difference indicating that pain was more chronic in those with headache and SAH. When a potential correlation between duration of headache and scores in sexual abuse was carried out, we found a positive and very significant correlation between these two variables (Spearman Rank Correlation Coefficient $r=0,518$, $p<0,001$), indicating that the relationship between chronicity of headache and scores in sexual abuse was straight and strong.

VI. Discussion

1. In the current investigation we evaluated chronicity of headache in different headache subgroups including in those with TTH, MIG, ON, headache and no SAH and headache + SAH. Headache of **longer duration** was observed more frequently in those with SAH as compared with headache subjects without SAH. Findings in the current investigation are in line with some studies indicating that some pain disorders including back pain and headache may have a multifactorial etiology including a SAH. Further, only some people progress from episodic to chronic migraine or to other headache disorders^[9]. There is some body of clinical evidence indicating that prevalence rates of aabuse history tend to be higher among patients in pain clinics. Studies also indicate that abuse history increases the likelihood for the development of pain disorders including headaches^[10]. Chronic migraine is more likely to be observed in those people reporting a previous experience of some form of sexual abuse in childhood^[9]. SAH is usually associated with higher levels of some psychological disorders including anxiety, depression and lower self-esteem. These psychological disorders render the victim more vulnerable to longer duration of a pain disorder. This assumption is consonant with one investigation^[5] asserting that when headache co-occur with psychological problems and functional impairment, head pain becomes persistent and is facilitated by such problems and thus, becomes more chronic. It may also be that the characteristics of a specific pain disorder (for instance, severer pain, pain in other anatomic sites and decreased functional status) co-occurring with psychological disorders including anxiety and depression facilitate the progression of pain in subjects with SAH. Supporting these assumptions one study^[11], indicates that more severe pain, greater number of pain symptoms and higher scores in psychological distress were observed in subjects with chronic pain and SAH.

2. When the five groups of subjects with CMDs and TTH, CMDs and MIG, CMDs and MYO-HA, CMDs and ON and headache with no SAH were compared, **longer duration of pain** was observed in the ON subgroup as compared to the TTH, to the MIG subgroup, to the MYO and to the HA- No SAH subgroup. In all these pairs comparisons the difference was very significant. Very likely factors contributing to longer duration of pain in ON as compared to the other headache subgroups include **severity of pain, difficulties to diagnose this disorder, excessive use of over the counter medications**, presence of psychological factors including **depression, time elapsed since episodes of pain began and correct diagnosed was established, central and peripheral sensitization** and other factors.

Regarding the relationship between longer duration of ON pain and **severity**, the previous assumptions are in line with one investigation^[12] reporting that pain in ON may be very severe and paroxysmal attacks may last seconds to minutes in between paroxysm and a secondary dull aching pain may also be observed. ON is described as unilateral or bilateral and is described as shooting, throbbing, lancinating of moderate to severe intensity presenting with a pain generating area in the cervical structures^[13] Pain in ON is so severe that it is not uncommon that patients visit an emergency department to alleviate their suffering.^[14] ON is currently considered as a neuropathic pain, thus, the symptoms are extremely severe and disabling^[15]. Further, a pain described as sharp, paroxysmal, severe in the occipital region, sensory disturbances and tenderness over the affected area, are elements used to diagnose ON^[16].

In regard to **difficulties to diagnose** ON, this assumption has support in one investigation^[12] indicating that because many signs and symptoms of ON may overlap with those of cervicogenic headache, migraine and tension-type headache, the diagnostic of ON may be difficult or complicated. Because there are many interneural connections in the trigeminal spinal nuclei and cervical neurons in the trigeminocervical complex (TCC), pain in ON may be referred to areas innervated by the trigeminal nerve^[12], adding additional difficulties to ON diagnosis. Following many examinations and provisional diagnosis, the definitive diagnosis of ON is obtained based on the observation that pain is provoked by manipulation of the greater and lesser occipital nerves^[17]. Thus, palpation, pressure or manipulation of the anatomic areas are essential tools that should be used to establish the final diagnosis of ON.

Supporting the assumption that longer duration of pain in ON may occur associated with **excessive use of over the counter medication and other drugs** when a diagnose has not been established properly, one

investigation^[14] described a case in which the patient was taking non-steroidal analgesics, carbamazepine, tramadol and gabapentine with some degree of relief. Thomas and associates^[17] described a clinical case and the management of a patient presenting with signs and symptoms of ON and reporting that various types of over-the-counter and other medications including indomethacin, lamotrigine and intramuscular tramadol were prescribed but were unsuccessful to abolish patient's pain. ON is a refractory and disabling disorder characterized by recurrent headaches of moderate to severe intensity localized to the occipital region usually with a chronic characteristic which translates into diminished productivity and dependence on pain medication^[18].

Supporting the assumption that depression may contribute to longer duration in ON in the course of the disease, one investigation^[17] reports one clinical case in which, indomethacin, lamotrigine, antidepressants and intramuscular tramadol were consecutively prescribed to alleviate pain and depression. Frustration with inadequate diagnosis, chronicity of pain, multiple referrals, frequent recurrence and the fact that ON pain is a neuropathic pain recalcitrant to conventional modes of therapy, may contribute to depression in ON patients. In line with these observations, one study^[19] reports the use of many modes of treatment including amitriptyline in a patient presenting with signs and symptoms of ON and a history of multiple referrals. Further, pharmacological treatment of ON includes posture correction and reducing the neuralgic and muscle pain, tricyclic antidepressants and anticonvulsants^[20]. Mood disorders have been shown to influence the effectiveness of treatment modalities for chronic pain^[21]. Poor quality of life, depression, anxiety and sleep disturbances are common disorders in patients presenting with signs and symptoms ON and these disorders may ameliorate using anesthetic block to the greater occipital nerve^[22].

Regarding the influence of the long time elapsed since the initial development of signs and symptoms until the final diagnosis of ON is established, this assumption is in line with one study^[17] reporting a case in which many treatments were planned without the correct diagnosis ON. In this case, indomethacin 50mg, lamotrigine, antidepressants, and intramuscular were successively prescribed until the correct diagnosis of ON was finally established. ON is usually described as chronic, more likely due to the lag between the onset of symptoms and the diagnosis^[23]. The fact that in ON there is overlap with other disorders, that ON may mimic other headache disorders, and difficulties to diagnose this headache^[18] in the first diagnostic and treatment interviews, may increase the lag between the first clinical interview and the time in which the proper diagnosis is established when the disorder has already become chronic.

Regarding central and peripheral sensitization, the aforementioned consideration is congruent with one investigation^[24] indicating that in the course of chronification distinct headache conditions tend to show increasing clinical similarity^[24] for instance increased severity and the development of central excitatory effects. Further, researchers in such investigation assert that the underlying chronification of different headache types is closely associated with temporal summation, sensitization of nociceptive structures and deficiency of the antinociceptive descending mechanisms. Further support for a relationship between more chronic ON and sensitization, comes from one study^[14] indicating that sensitization of central nociceptive neurons in the TCC usually occurs as a response to strong dural inputs seen in secondary headaches, but may also be observed in some common headaches including tension-type headache, migraine headaches and occipital neuralgia. Chronic noxious afferent input of ON may lead to central sensitization of the TCC^[14] and result in ON pain of longer duration. A pathological vascular contact with the greater occipital nerve may be associated with sensitization and hypersensitivity of the second order neurons in the TCC^[25]. Because this type of pain is very severe and complex, it may become more chronic with time.

3. In subjects with HA and SAH there was a direct and significant correlation between higher scores in SA and longer duration of pain indicating that more severe or more frequent sexual abuse is significantly correlated with longer duration of ON pain. This finding does not necessarily indicate that sexual abuse is the most important etiological factor increasing headache duration and severity. It merely means that the connection between longer duration of headache and severer or more frequent sexual abuse was very strong. A negative yet interesting aspect of sexual abuse is that it causes a number of psychological disorders including anxiety, depression, somatization, lower self-esteem, and disability which in turn contribute to longer duration of headache. One must view this disorder from an operational clinical point of view. If such disorders are in some way correlated with sexual abuse, it may take a longer period of time to treat this combination of disorders (multiple medical visits, use of complex diagnostic procedures, use of larger amounts of different medications). Thus, headache may progress to a more chronic condition. Because we found a high prevalence of SAH among CMDs subjects with headache, the outcome in the current investigation is supported by another study^[26] reporting a high prevalence of sexual abuse in CMDs subjects. These observations indicate that at least in some CMDs individuals with headache, the correlation between more chronic headache and severer sexual abuse is strong. Headache disability is a disorder associated with negative characteristics of pain including severity, longer duration of pain, anxiety, duration and probably with multiple pain sites adjacent to the source of headache. These factors when combined with SAH may induce transformation of headache into a more

chronic pain disorder. Consonant with these point of view, one investigation^[4] reported that headache disability was higher in a group of orofacial pain patients presenting with traumatic life events and correlated with that report of traumatic events^[4]. Longer duration of pain may be one major component of disability in headache patients. Thus, headache may be more disabling in those with a history of traumatic life events^[3]. Consequently there may be an indirect yet strong correlation between longer duration of pain and a history of traumatic life events including physical and or sexual abuse. Recent research indicates that there is a direct correlation between a history of sexual abuse and chronic daily headaches in 31% of subjects with a history of headache^[3]. Recent studies^[5] have demonstrated that there is a stronger association between personal traumatic events and combination headache indicating that traumatic events expose the individual to more severe and complex head pains. Positive associations have been found between a range of childhood traumatic events including abuse and headache^[5].

4. Sexual abuse history contributes to pain of longer duration through different psychological and neurophysiological mechanisms. As mentioned before, a history of sexual abuse may occur together with many psychological disorders including the development of anxiety, depression, somatization, low self-esteem, and disability, just to name a few. Thus, a sexual abuse history may be correlated with longer duration of pain mediated through many sexual abuse related psychological factors. Supporting these assumptions, one investigation^[9] examined potential mechanisms leading to chronification of headache pain. Researcher reported that depression, poor sleep, SAH and anxiety are reported more frequently in subjects with chronic than in those with episodic migraine. One mechanism linking headache with SAH is one in which a history of abuse increases symptom severity and negatively affects health status, physical functioning and quality of life^[10] which in turn increase pain duration. Further, exposure to interpersonal violence including sexual abuse, increases the risk of functional impairment and persistence of headache complaints^[5] from adolescence to adulthood. One investigation^[27] evaluated female patients consecutively referred to a center for management of chronic pain. Researchers reported a prevalence of 37% of sexual abuse. They also reported that females who reported physical or sexual abuse had more severe pain, other physical symptoms, anxiety and mental health care utilization compared to nonabused females.

Depression is undoubtedly correlated with a history of sexual, physical or emotional abuse. Childhood sexual abuse has been correlated with higher levels of depression, guilt, shame, eating disorders, anxiety, dissociation disorders and excessive somatic concerns^[28]. The incidence of depressive symptoms is higher in those subjects with a longer history of headaches and with a higher attack frequency^[3]. Depression seems to occur more frequently in those with combination headache, migraine and occipital neuralgia.

Because psychological assessment is not performed routinely among health professionals, larger amounts of drugs are intended to ameliorate pain, anxiety and stress rather than treat psychological disorders. There is no doubt that the medical approach of “improving signs and symptoms” rather than treating psychologically associated disorders in those with SAH, contributes to the chronification of headache. The aforementioned considerations are in line with one investigation^[26] reporting that patients who develop chronic CMDs and concomitant headaches, appear to have more psychosocial distress before the diagnosis of chronicity than do individuals presenting with acute symptoms that subside with time^[29]. Because SAH is reported more frequently among those patients with chronic migraine, such association raises the possibility that prior sexual abuse is a significant contributing factor in the transformation from episodic to chronic migraine^[30]. This correlation may also be valid in other cases of headache, for instance, combination headache and occipital neuralgia. However, additional research in this field is mandatory in order to better define the role of sexual abuse.

A potential mechanism increasing the likelihood of more chronic headache disorders in those with SAH is the ineffectiveness of many conventional drugs to treat severe headache. In those subjects reporting migraine with concomitant depression and anxiety, migraine tends to be more severe and responds poorly to migraine medication encouraging patients to use larger amounts of medication which in turn contribute to the development of medication-overuse headache^[3], and thus, of headache of longer duration.

VII. Conclusion

ON subjects in the current study were usually older as compared with subjects in the other three headache subgroup and presented with a more chronic headache complain. Further, subjects with ON and a report of sexual abuse reported a longer duration of pain. Duration of headache and scores in sexual abuse independent of the type of headache were significantly correlated. Thus, sexual abuse has a significant role in the perpetuation of head pain. Further studies should be carried out to shed more light on the complex relationships between a history of sexual abuse and longer duration of headache.

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Table 1: Social and Demographic data in CMDs and headache subjects with TTH (n=30); MIG (n=26); MYO-HA (n=22); ON (n=30), HA-SAH (n=62), HA+ SAH (n=46).

	TTH n=30	MIG n=26	MYO-HA n=22	ON n=30	HA-SAH n=62	HA+SAH n=46
AGE						
Mean	31,2	34,0	33,3	40,1*	36,8	34,3**
SD	13,9	11,3	10,2	11,6	12,9	12,3
Range	14—66	20—66	14—65	18--75	14—75	14—66
GENRE						
Females	29	26	21	29	61	45
Males	1	0	1	1	1	1
Totals	30	26	22	30	62	46

*Kruskal-Wallis Statistics ($p < 0,0001$), an extremely significant difference: TTH versus MIG ($p > 0,05$); TTH versus MIO-HA ($p > 0,05$); TTH versus ON ($p < 0,001$); MIG versus MIO-HA ($p > 0,05$); MIG versus ON ($p < 0,01$); MYO-HA versus ON ($p < 0,01$).

**Unpaired (parametric) t-test ($p = 0,26$). No difference regarding age when the subgroup HA No sexual abuse and HA and sexual abuse were compared.

Table 2: Mean duration of headache (Years) in different headache subgroups including those with headache and SAH and with headache and no SAH.

	TTH n=30	MIG n=28	MYO-HA n=22	ON n=30	HA-SAH n=62	HA+SAH n=46
PAIN DURATION						
Mean	5,5	6,1	6,1	14,2*	5,0	11,0**
SD	9,0	6,4	7,2	11,1	5,3	11,0
Range	1—43	1-25	1-27	2—40	0,5—25	1—40

*Kruskal-Wallis nonparametric analysis of variance ($p < 0,0001$), extremely significant difference: TTH versus MIG ($p > 0,05$); TTH versus MYO HA ($p > 0,05$); TTH versus ON ($p < 0,001$); MIG versus MYO HA ($P > 0,05$); MIG versus ON ($P < 0,01$), MYO HA versus ON ($p < 0,01$).

**Mann-Whitney statistics ($p < 0,001$), a very significant difference.

Table 3: Basic data about the relationship between scores in sexual abuse and duration of headache pain in a subgroup of subjects with headache and SAH (n=46)

	SAH Scores	Headache Duration (Years)	p-value
Mean	5,3	7,8	
SD	4,2	9,4	
Range	1—22	1—40	
Spearman r=0,33			$p < 0,03$

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