

Association of Childhood Trauma with Migraines in Men

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ABSTRACT

Advancements in knowledge are needed to identify the link between childhood trauma and migraines in men. Though migraines are more prevalent in women, research about migraines in men with past traumatic exposure has received little attention. There are 9% of men of all ages with migraines in the United States, 12% of adult males in Europe between the ages of 18 and 65 with migraines, and 5 to 29% of males who experienced childhood sexual abuse, in other words, 1 in 6 males; whereby 50% of children who are sex trafficked in the United States are males, while 4% of male victims of significant trauma develop post-traumatic stress disorder. There may be a strong correlation that suggests that male migraine sufferers are more likely to have experienced some form of childhood trauma, in particular sexual abuse. Men's migraines underrepresentation in research limits understanding of the adverse effects of childhood sexual abuse that often results in post-traumatic stress disorder and other psychiatric and medical conditions. As migraines become more understood, advances in our understanding of the neurobiological effects of trauma on brain structure and function may suggest a possible impact of early-life stress on the onset of migraines. Early-life stress-induced conditions in males may manifest because of sexual abuse often being undetected, fear of speaking out, or fear of being embarrassed. Unlike physical abuse where bruises are visible or neglect where malnourishment is noticeable, sexual abuse may inflict hidden bruises that may contribute to males suffering in silence. An increase in our knowledge may identify sexual abuse as the link between childhood trauma and migraines in men to suggest new treatment strategies.

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Received: September 18, 2022; **Accepted:** September 21, 2022; **Published:** September 27, 2022

Keywords: Childhood Trauma, Post-Traumatic Stress Disorder, Men's Migraines, Childhood Sexual Abuse, Comorbidity

Introduction

There is a need to explore the interconnection between childhood sexual abuse and migraines in men. Migraine is one of the most common neurological disorders worldwide, a frequently disabling disorder that has a significant negative impact on both the patient and society [1]. Though significant research has explored women with migraines and trauma, few studies have investigated migraines in men with childhood trauma. As many as 69% of people in the general population suffer from migraines, and stress (62%), weather changes (43%), missing meals (40%), bright sunlight (38%), and sexual activity (5%) were reported as some triggers among migraine sufferers [1-4]. Some seasons also may contribute to the onset of migraine attacks, causing intense pain. The spring (14%), fall (13%), summer (11%), and winter (7%), in this order, were reported as the seasons of migraine attacks [4]. Though various factors may provide insights into how some conditions may trigger migraines in men, there is a great need to identify the link between childhood trauma and a wide range of later health problems such as migraines, especially in men. There is a possibility that there could be a link between the two conditions (childhood sexual abuse and migraines in men), but this connection has not been investigated thoroughly to confirm its existence. Among the 69% of people suffering from migraines, 9% of men have migraines with 1% of them having persistent forms of migraine, while as many as 15 to 30% of females and 5 to 29% of males experienced sexual abuse in

childhood or adolescence, in other words, 1 in 6 males [2,3,5-15]. Childhood trauma has been shown to increase the risk of migraine in adulthood, and the worsened severity and frequency of migraines in men [16,17]. The abused child's living conditions may affect the child's ability or inability to cope. Children who grow up in insecure surroundings and households may develop some coping skills that enable them to live their daily lives and survive [17]. However, the limited coping skills may be sufficient to help them sustain emotionally and mentally for a short-term duration, but not enough for long-term to empower them to achieve mental agility to heal in adulthood from past childhood trauma.

Migraines are a frequent source of widespread discomfort, a decline in quality of life, and a reduction in involvement in social and professional activities [16]. While migraines contribute to a decline in daily comfort and functionality, migraines associated with childhood trauma in men may yield promising findings. Migraines can be unbearable which hinders some sufferers' ability to work, sleep, eat, or perform daily tasks. Migraines are almost twice as high for those who reported childhood abuse in comparison with those who did not [18,19]. Understanding how the human brains of traumatized individuals are affected may explain why migraines often occur in adults who experienced childhood trauma.

Sexual, physical, and emotional abuse create a predisposition to headaches, and individuals with migraine may have experienced abuse in early life [20]. There is a possibility that childhood trauma also may cause physical health effects, such as chronic pain, headaches, especially migraines, gastrointestinal problems, and

other medical conditions, as well as post-traumatic stress disorder, depression, anxiety, eating disorders, and other psychiatric conditions. When given the proper care and encouragement, some children can recover and go on to have full, healthy lives, while others who experienced lasting effects of abuse can continue to have impacts on their mental and physical health into adulthood [17,21]. Childhood trauma causes devastating memories that can continue across a lifespan. The effects of childhood abuse can be far-reaching and long-lasting for some individuals which may result in unresolved trauma that consequentially causes migraines. Trauma can lead to physical, emotional, and behavioral problems, and it can have a negative impact on every area of a child's life [16].

Historically, research has focused on girls and women as victims of sexual violence with little focus on the peer victimization of boys and men, as most state laws defined rape as a crime against women until the 1980s [22,23]. When treating male patients with migraine, health care providers should inquire about their history of childhood trauma, in particular childhood sexual abuse, and provide appropriate resources and support. Additionally, men who experience childhood trauma are more likely to suffer from chronic migraines and are at increased risk of other health problems, such as heart attacks, post-traumatic stress, anxiety, and depression [5,24,25]. Though no single causation is proclaimed, the compelling findings of this narrative study suggest that there is a strong possibility that a link may exist between childhood sexual abuse and migraines in men.

Migraines & Men

Migraines are the most common neurological disorder, affecting more than 36 million people, and are one of the world's major causes of disability [26]. Nine percent of males have migraines [6]. Some migraineurs experience auras with migraines, and the precipitating causes, frequency, and duration may vary. Between 15 and 20% of people who get migraines experience auras, and an aura affects roughly 15 to 20% of people [27]. The chances of a person having migraines may be associated with external and internal factors such as trauma, environmental, stressors, and other factors, including hereditary. There is a 50% chance that a person will get migraines when one parent has migraines, and when both parents have migraines, the risk increases to a 75% chance [27].

Numerous studies indicate that migraine is a frequent source of widespread discomfort, a decline in quality of life, and a reduction in involvement in social and professional activities [16]. Migraines are a type of headache that can be quite incapacitating and symptoms may include lightheadedness, nausea, and sensitivity to sound. There is no clear cause for migraines, but a combination of factors like genetics, environmental conditions, seasonal changes, and stress seem to play a major role in triggering migraines [1,4,6]. Trauma-related factors may also induce stress that is likely to trigger a migraine. Migraine, tension-type headache, trigeminal autonomic cephalalgias, and other primary headaches are the four different categories of primary headaches [29]. Each type has its own set of symptoms, and each type is treated differently. Though men experience migraines at a lesser frequency than women, there is a significant need for further understanding of men's migraines. To better comprehend the connection between exposure to childhood trauma and migraines in men, additional study is required [30,31].

Studies have shown that 9% of males in the United States are regular sufferers of migraines, and 12% of adult males over 18 in Europe suffer from migraines [6,17]. There is a possibility that

early exposure to childhood trauma may be a determining factor in the later onset of migraines in men. Migraine represents 2.2% of all years of life lost due to disability and is the thirteenth greatest cause of disability for men in Europe [32]. Less than 1% of visits to the doctor's office are due to headaches, and it is the sixth most frequent reason for males to attend the emergency room [33]. Migraines may contribute to incapacitating conditions as well as risks of PTSD. A survey found that compared to those without headache disorders, who had rates of 2.1% and 4.5%, respectively, migraineurs had higher lifetime and 12-month prevalence rates of PTSD [13]. Compared to men without a concussion, who get migraines only 2% of the time, 10% of men with concussions have migraines [34].

Migraines are often caused by stress or dehydration and are often treatable with over-the-counter painkillers [35]. Cluster headaches are more painful even though they are less common. They are characterized by severe, scorching pain on one side of the brain and can last for hours or even days. Cluster headaches may be treated with prescription medication. Migraines with aura are less common and are characterized by visual or sensory disturbances before the onset of pain. These disturbances can include flashing lights, blind spots, or tingling in the hands or feet. A combination of over-the-counter and prescription drugs is used to treat migraines with aura [35]. Migraines without aura are the most severe type of migraine. They are characterized by intense, throbbing pain, and can last for days or even weeks. Migraines without aura are treated with a combination of over-the-counter and prescription medications as well as lifestyle changes [35].

Migraine is not just a headache; it is a severe neurological condition that could have a variety of negative repercussions on a man's life. Males with migraines are significantly less likely than females to utilize prescription medicines and significantly more likely to use only over-the-counter painkillers [36]. Migraine is a common chronic headache disorder that is characterized by recurrent attacks of moderate to severe pain. Migraines can be severely debilitating and are considered one of the main causes of disability worldwide [32]. The pain is typically throbbing or pulsing and is accompanied by symptoms including nausea, vomiting, and sensitivity to light and sound. Migraine is an incapacitating condition that can significantly impact a person's quality of life. Some techniques can help with symptom management even if there is no known cure for migraine [37].

Childhood Sexual Abuse & Migraines

Maltreatment during childhood increases vulnerability to a host of health disorders, including migraines [38]. One area that has received less attention, but which may be especially relevant for men, is the link between childhood sexual abuse and migraines in men. Growing evidence suggests that childhood trauma can cause migraines in men, however, some causes and triggers may affect men and women differently. One commonality between the sexes is that both may suffer from migraines as a result of childhood trauma exposure, and childhood trauma comes in many forms, from physical abuse, sexual abuse, and neglect to emotional abuse and witnessing violence [39,17]. Childhood sexual abuse often goes unreported, undetected, and untreated in males. A person's mental health may be affected for a long time by childhood sexual abuse [40]. While some research has explored the link between childhood trauma exposure, such as sexual abuse, and migraines in women, less is known about how this type of exposure affects men [21].

Female survivors of child abuse are highly focused on in research, while male counterparts go unheard of or are vaguely discussed.

There is a strong possibility that child sexual abuse can have a profound effect on the brain structure and function not only in women but also in men as well. Of the children who are sex trafficked in the United States, 50% are males [8]. Child sexual abuse could alter brain development leading to long-term consequences. There is sufficient evidence to support that child sexual abuse alters brain development, thereby increasing the likelihood of developing psychopathology later in life [41]. The fact that migraine affects women up to three times more frequently than it does men after puberty shows that hormones likely play a significant role [25,42]. While there are noteworthy differences, strong similarities exist between male and female sexually abused survivors with migraines that deserve equal attention in studies.

Trauma-related factors associated with migraines in females are important, though a focus on males is necessary as well because males, in comparison to females, may be less likely to seek help for their trauma which may prevent or delay necessary treatment. Some males are socially molded to believe that they need to be tough and self-reliant which may hinder their willingness to report such abuse or seek help. Feeling ashamed or embarrassed also may contribute to males' reluctance to report being sexually abused. Most males delayed or never disclosed being sexually abused as a child. Most preferred delaying disclosure, and for those who tried to disclose in childhood, attempts were often made in behavioral or indirect verbal ways [43]. Hence, males reported difficulty disclosing because they feared being viewed as homosexual and as victims whereas women's difficulties centered on feeling conflicted about responsibility, and they more strongly anticipated being blamed or not believed [43]. Delayed or failure in disclosure could lead to a lack of treatment which may result in the severity of psychiatric conditions such as post-traumatic stress disorder or other psychiatric conditions.

Male survivors of childhood sexual abuse often may be viewed as less vulnerable than females which suggest that professionals may be less likely to inquire about sexual abuse from males with migraines than from females. Studies found that 5 to 29% of men and 7 to 36% of women reported being sexually abused as a child [8-10,13,15,33]. Roughly one-third of these incidents involved penetrating assault [27]. Though women are subjected to childhood sexual abuse more than men, both are vulnerable to psychological damage. One of the most common forms of post-traumatic stress disorder is primary trauma which is a major cause of psychological damage [44]. Men are usually brought up with the idea that they must financially provide for their families and may feel pressured to succeed which can lead to many males acting out their trauma in destructive ways such as binge drinking or substance abuse [31]. Men who experience childhood trauma may be more likely to suffer from migraines and may have different psychological impacts than women.

Childhood sexual abuse can have a profound effect on a man's mental and physical health throughout his life [45]. An estimated one in six men report having experienced sexual abuse as minors, and 4% of men reported exposure to severe psychological abuse during childhood [2,5,46]. Childhood trauma may have the propensity of causing later life health and psychological effects such as migraines, post-traumatic stress disorder, and other conditions. Studies show that 5 to 29% of males experienced sexual abuse in childhood, in other words, 1 in 6 males [8-15]. While 4% of men reported being diagnosed with post-traumatic stress disorder [47,10]. Even though trauma can be manifested from any form of abuse, childhood sexual abuse may be a more significant contributing factor than physical abuse in men with

migraines. Though in a study 66 men (14.2%) and 152 women (32.3%) reported childhood sexual abuse, and 103 men (22.2%) and 92 women (19.5) reported physical abuse, a significant finding revealed that sexual abuse predicted more symptoms variance than physical abuse did on the Traumatic Symptoms Inventory [9].

Childhood sexual abuse in men may precipitate intense levels of stress that may cause imbalances in brain functioning that may result in migraines. Society's perception that males are not sexually abused or to a lesser degree than females also may have accelerated the silence of the male victims which may lead to profound consequential effects. Putative mechanisms linking childhood maltreatment and migraine include stress-induced dysregulation of the hypothalamic-pituitary-adrenal axis as well as disruption of other stress-mediating homeostatic systems, resulting in prolonged elevation of gluco-corticoids that alter the limbic system which causes structural and functional changes similar as in maltreatment and migraines [47]. Sexual abuse compounded by psychological abuse also may contribute to the severity and frequency of migraines in men. In the United States, 4% of men have experienced serious psychological abuse as children, which also can cause PTSD and may intensify the long-term effects of childhood sexual abuse [47,10].

There is still much to learn about the potential long-term effects of childhood sexual abuse in men, but some literature is beginning to uncover various ways that trauma can impact adult survivors. Though there is no definite causation, males who suffer from migraines may have been subjected to childhood trauma such as being sexually abused [49]. While the exact prevalence of migraines is difficult to determine, they are thought to affect around 9 to 12% of men [6,7]. While migraines can affect both men and women, they are somewhat more common in women. This gender disparity may be due in part to hormonal differences, but it could also be influenced by other factors, including childhood trauma [17,25]. Therefore, advancements in research about childhood sexual abuse and migraines in men are necessary to enhance understanding as well as identify new treatment strategies.

Post-Traumatic Stress Disorder and Migraines

Post-traumatic stress disorder (PTSD) is a mental health condition triggered by a stress-induced terrifying event, either by experiencing it personally or witnessing it, whose symptoms may include flashbacks, nightmares, and severe anxiety, as well as uncontrollable thoughts about the event [47]. PTSD can be diagnosed in children and adults who are exposed to traumatic situations such as physical, emotional, or sexual abuse and other maltreatment. Childhood sexual abuse can have a lasting impact on a person's life, and consequentially can evolve into PTSD. Compared to roughly 4 of every 100 men (4%), about 8 out of every 100 women (8%) have PTSD [10,11,49]. Migraines can be very incapacitating, and PTSD may be a risk factor for migraines [12]. Untreated PTSD among individuals with severe mental illness is linked to increased symptom severity for both the PTSD and the comorbid disorder, increased hospitalization, extended treatment, poorer overall health outcomes, increased likelihood of being diagnosed as having substance use disorders, and a tendency to use expensive psychiatric services [51,26].

Sex & Age Variation in PTSD and Migraines

The lifetime prevalence of PTSD is 8 to 9% and approximately 25 to 30% of victims of significant trauma develop PTSD [52]. PTSD may affect a person's ability to cope with and heal from childhood sexual abuse while trying to manage the intensity and frequency of migraines. The severity of migraines can significantly affect a

person's quality of life [44]. Women with PTSD are 4.1 times as likely to develop depression as those without PTSD, while men with PTSD are 6.9 times as likely to develop depression as those men without PTSD [52]. The sex-specific risk ratio of PTSD in episodic migraineurs was compared to those without headaches in a general population sample of 5,692 participants. The study revealed that though both men and women with migraines had higher risks of developing PTSD than those without a headache, men with migraines had 3 to 4 times higher odds than women with migraines [10].

Age and sex variation play a significant role in migraines in females and males. A life-span study assessing age and sex-specific patterns of migraine prevalence was conducted using a United States population of 40,892 men, women, and children. The study found that beyond the age of 10 years, females had a higher prevalence of migraine than males, and the prevalence ratio for females versus males was highest during the female reproductive/child-bearing years, consistent with a relationship between menstruation and migraine [53]. For the sex variations in the PTSD-migraine relationship, the age at which the stressful life event that caused PTSD occurred may be a key component. The risk of major depression is higher when a terrible life experience occurs before the age of 13, but the risk of PTSD is higher when the traumatic life event occurs after the age of 12 [54]. Despite the established high prevalence of abuse in migraineurs, children under the age of 13 are most susceptible to PTSD and migraines [55]. Therefore, it is conceivable that sex differences in the age of traumatization within the migraine population impact sex disparities in PTSD risk. While PTSD and migraine affect both sexes, there are some key ways in which trauma and migraines may differ in men and women.

Trauma and Migraines in Men

Migraines may be more common in men who experienced childhood sexual abuse. Childhood sexual abuse can have a lasting negative effect on a man's physical and mental health [56]. Research on migraines in men with childhood traumatic exposures has received little attention. An estimated 9% of men have migraines, and 5 to 29% have experienced childhood sexual abuse [6-15]. A man's quality of life may be significantly impacted by pain endured by migraines and childhood trauma. Men reported more anxiety related to the pain, even though women rated the pain higher than men [57]. Men with childhood trauma are highly likely to suffer from migraine related to stress-induced factors from abusive conditions. Migraine may be under diagnosed in men due to them being less likely to seek medical help for headaches, and migraine may be misunderstood or misdiagnosed as other conditions such as tension headaches or sinus problems. Many men suffer needlessly from migraines, and some men may even be unaware that they have the condition [58]. Men also suffer from migraines and are abused which is poorly addressed.

Migraines can cause several symptoms in men, including severe headaches, nausea, vomiting, and sensitivity to light and sound. Migraines can also cause aura which is visual or other disturbances that occur before or during a migraine headache [59]. Migraines may be more common in men, especially when considering a link between childhood sexual abuse and migraines. Though trauma exposures as well as other contributing factors may precipitate migraines in men, the idea that there is a link between childhood sexual abuse and migraines in men is highly possible. Genetics also plays a role because over 70% of sufferers have a close relative who has migraines [6].

Adult males' experiences of childhood trauma may have a major impact on migraines [39]. A group of nearly 200 men with migraines were compared to a group of men without migraines, and the study found that the men with migraines were more likely to have experienced a range of traumatic events during childhood, including physical, sexual, and emotional abuse [18]. While the study did not prove that childhood trauma causes migraines, the findings suggest that there may be a link between the two. Not only are trauma and migraines major issues for sexually abused survivors, but other numerous psychological and personal factors can also leave lasting effects. An interview of 26 adult males who were child sexual abuse survivors, revealed fifteen psychological themes: anger, betrayal, fear, homosexuality issues, helplessness, isolation and alienation, legitimacy, loss, masculinity issues, negative childhood peer relations, negative schemas about people, negative schemas about the self, problems with sexuality, self-blame/guilt, and shame/humiliation [60]. This finding suggests that there is a chance that childhood trauma can have profound psychological effects on male sexually abused survivors.

Any form of childhood traumatic experience can have a lasting impact on health and well-being and has been linked to a variety of health conditions, including migraines in men [61]. Of significant importance, it has been proposed that men may be more vulnerable to some stressors due to the hypothalamic-pituitary-adrenal axis response in men, which has been linked to a stronger cortisol-releasing hormone stimulated adrenocorticotrophic hormone and exercise-stimulated cortisol response than in women [62]. Even though causation cannot be established between men's migraines and childhood sexual abuse, in comparison to women, it raises the possibility that PTSD from childhood sexual abuse may be linked to a higher propensity for migraine onset.

Trauma and Migraines in Women

Migraines are more common in women than in men and women's migraines have received vast attention [63,64]. Though abuse has been identified as a possible risk factor for migraines in women, abuse in men also occurs but the association with migraines, unlike women, has received limited attention. Women are more likely than men to experience ineffective pain treatment, and hormones like estrogen likely account for the disparity between men and women [25,65]. Childhood abuse in women may be more noticeable than in men due to the risk of pregnancy and other health-related conditions. Women are also more likely than men to experience more types of abuse overall, which could hurt their health [5]. Women and men are susceptible to being diagnosed with PTSD as a result of trauma exposure, including the potential risk of suffering from migraines related to traumatic events. Although men women and men with episodic migraine have an elevated risk of developing PTSD, this link is higher in males than in women [64]. Though women's migraines are of significant importance, advances in understanding and identifying the link between childhood sexual abuse and men's migraines are needed because of the lack of literature.

Comorbidity in Men

Post-traumatic stress disorder has a profound effect on every aspect of a person's life, including their physical health. A possible common medical condition that can be associated with PTSD is migraines. People with PTSD may experience migraines that start for a variety of reasons with any single causation. Males have migraines in 9% of cases and over 70% of sufferers have relatives with migraines [6]. Migraines have been identified as a comorbidity with other health-related conditions that are life-threatening. Men who experience migraines are 42% more likely

to experience a heart attack [25].

Trauma has been linked to a variety of health conditions, including migraines in men [61]. There are several complications in the body function of men with comorbidity, including trauma and migraines. Migraines can cause a decrease in testosterone levels, lead to a decrease in libido, erectile dysfunction, fatigue, memory problems, depression, nausea, sensitivity to light, and sensitivity to sound [66].

PTSD can be an extremely stressful condition, and stress can be a migraine trigger. PTSD can cause changes in brain chemistry that can increase the likelihood of developing migraines [39,6,18]. Men with PTSD are often more likely to have other health conditions that can trigger migraine. Other conditions such as sleep disorders, depression, and anxiety are likely associated with migraines, and the need for medical assistance should never be ignored [67]. Hence, PTSD is often a common comorbid disorder associated with childhood sexual abuse survivors.

The comorbidity of PTSD and migraine is more common in men than women. The odds ratio of PTSD was three to four times greater in male migraineurs than in female migraineurs [67]. The link between childhood trauma and migraines in men may be attributed to the type of maltreatment experiences (e.g., sexual abuse, physical abuse) and the onset of PTSD. A study found that 69% of people who also had episodic migraines in addition to PTSD stated that their PTSD symptoms started before they experienced a severe or persistent headache [68]. The comorbidity of PTSD and migraines may be determining factors in identifying the link between childhood sexual abuse and men's migraines.

Methodology

This narrative review was conducted to analyze childhood trauma associated with migraine in men. A literature review search was conducted by using Saint James School of Medicine's library resources as well as PubMed, PsycINFO, and Google Scholar. The text words "child abuse," "childhood trauma," "post-traumatic stress disorder (PTSD)," "men," "migraines," "childhood sexual abuse," "with the use of Boolean operator "AND" the terms "men's migraines" were used to identify studies on childhood sexual abuse survivors among men with migraines. Details about childhood sexual abuse and migraine in men were also collected in a two-phase process. The first phase was to check the correlation between childhood sexual abuse and trauma. The second phase included the study of the impact of trauma on migraine in men. The inclusion criteria consisted of a) scholarly or peer-reviewed sources; b) relevant books and sources; c) articles published in the English language only; d) male and female childhood sexual abuse survivors; e) males and females with migraines; and f) comorbidities associated with migraines in men. The final inclusion of literature used in this narrative review was selected based on the quality and relevance of the information about childhood trauma and migraine in men.

Discussion

This narrative review study sought to fill a knowledge gap by investigating the potential association between childhood trauma exposure and migraines in men. This study found that men who reported exposure to childhood trauma were more likely to experience migraines as adults, compared to those who did not report any exposure [69,42]. While the study did not examine why this association exists, it is possible that trauma exposure early in life can lead to changes in the brain that make one more susceptible to migraines later in adulthood. An interesting finding revealed

that not only does headache appear to be related to childhood maltreatment, but headache in the abused is also more disabling and frequent, including being more likely to be continuous and to "transform" from episodic to chronic migraine [49].

Nearly 60% of individuals identified physical or sexual abuse as the primary factor of childhood trauma [13]. An interesting finding showed that PTSD is linked to trauma and can cause changes in brain chemistry that can increase the likelihood of developing migraines [39,18,58]. Not only PTSD may coincide with migraines, but migraines also contribute to other psychiatric and health comorbidities in men. An unexpected finding showed that migraines can cause a decrease in testosterone levels and lead to a decrease in libido, erectile dysfunction, fatigue, memory problems, depression, nausea, sensitivity to light, and sensitivity to sound [66]. Hence, an important finding asserted that women with PTSD are 4.1 times as likely to develop depression as those without PTSD, while men with PTSD are 6.9 times as likely to develop depression as those men without PTSD [52].

There are some common experiences that most people would agree are indicative of childhood trauma: neglect, physical abuse, sexual abuse, emotional abuse, poverty, maltreatment, human trafficking, immigration, refugee abuse, and homelessness [70]. Though all types of childhood trauma have the propensity to cause long-lasting negative effects, there is a need to explore whether childhood sexual abuse exposure has a link to migraines in men. On average, 5 to 29% of reported child sexual abuse cases are of males, and childhood trauma can manifest in men in ways such as difficulty trusting others, navigating relationships, and keeping a job, while others may turn to substance misuse to cope with their feelings and may suffer from post-traumatic stress disorder, depression, anxiety, and headaches [8-15]. Childhood sexual abuse also was found to have a lasting impact on a person's life [50].

Children who experience neglect are more likely to have mental health problems in adulthood, while children who are sexually abused are more likely to engage in risky behaviors [18]. The impact of childhood trauma may depend on the type, frequency, and time frame of onset of the abuse. An interesting finding revealed that there is epidemiological evidence regarding early life stressors associated with migraine onset, including childhood sexual abuse and maternal depression [71]. Childhood sexual abuse not only may subject survivors to migraines, but also to other conditions that pose challenges for men. A noteworthy finding revealed that approximately equal numbers of men and women were abused by male and female perpetrators and almost half of them came from disrupted or violent homes and a majority had a history of substance abuse [60].

The impact of childhood sexual abuse on a man's mental and physical health can cause negative outcomes as well as affect his relationships [72]. Survivors of childhood sexual abuse experience a wide spectrum of negative effects, and survivors must receive support to try to recover and heal from traumatic past events [10]. Some survivors may encounter challenges recovering from childhood sexual abuse which may exacerbate the frequency of migraines and contribute to other physical and psychological conditions. A significant finding found that adults who experienced childhood sexual abuse are more likely to suffer from migraines and while the mechanism underlying this link is not yet clear, it is thought that childhood sexual abuse can lead to changes in the brain that make adults more prone to migraine, especially in men who are often underrepresented in studies [61,42,29]. This is a potentially important finding, as it suggests that addressing

childhood sexual abuse could help to reduce the burden of migraines in adults. More research is needed to establish causation and to understand the underlying mechanism of both childhood maltreatment and migraines which may be more prevalent in men.

Some epidemiological studies revealed that migraines are more common in men who were molested as children, while the precise cause is still unknown [30]. The impact of child sexual abuse on brain structure and function in men presents many concerns, not only for the possible link to migraines and post-traumatic stress disorder but for other significant psychiatric conditions. An unexpected finding revealed that childhood trauma can alter brain development leading to long-term consequences, thereby increasing the likelihood of developing psychological impairment later in life [41].

Limitations of Past Research

Though this narrative review presents important findings about childhood sexual abuse associated with migraines in men to contribute to the literature, it is not without limitations. Numerous studies were identified that have explored the connection between childhood trauma and migraine in men. However, these studies have had some limitations. Many have been small in scale, and only a few included a wide range of participants. Given the lack of studies across numerous countries and continents, the findings are difficult to apply to other populations because the majority of the research on this subject has been conducted in western countries. Despite these limitations, the evidence points to a robust link between primary and secondary childhood trauma and migraine in men. More study is necessary to completely understand the relationship between migraines in men and childhood trauma exposure.

Recommendations for Future Research

Migraine is one of the most common chronic diseases and its impact on the lives of sufferers is often very severe. The effects of childhood trauma can last a lifetime, and it is important to address them early on and identify causations of brain functions and structures. More research is needed on the connection between childhood trauma exposure and migraine in men. Studies that focus on specific types of trauma exposure (e.g., sexual, physical, and emotional abuse) and their connection to migraine are needed. Research is needed to determine if there is a difference in the connection between types of traumatic exposures and migraine among men. Studies that examine the correlation between childhood trauma exposure and migraine in men of different racial and ethnic groups are needed. Research is needed to determine the mechanisms by which childhood sexual abuse trauma exposure may lead to migraine in men.

Conclusion

There is a strong correlation between childhood sexual abuse survivors and migraine in men. In recent years, the number of reported cases of child sexual abuse in men is increasing. There has been an increased recognition that more attention needs to be paid to this area about the association between migraines and childhood trauma exposure associated with sexual abuse in men. While the relationship between childhood sexual abuse and migraines in men is not fully understood, there is a need for a growing body of research evidence to suggest that there is a link between the two. There are several reasons why childhood sexual abuse can cause migraines in adulthood that should be considered. One of the most common reasons is that it can lead to a build-up of stress and tension in the body which is significant because a traumatized child may constantly be in a state of alert, always

expecting the next abuse to happen. Childhood sexual abuse can lead to a build-up of stress hormones in the body which can eventually lead to migraines. Childhood sexual abuse can also cause migraines because it can lead to damage to the nervous system. Since trauma exposure can cause the body to produce high levels of stress hormones that can damage the nerves, the damage can eventually lead to migraines. Childhood sexual abuse can cause migraines because it can lead to changes in the brain. In men, sexual abuse can cause changes in the way the brain processes information which can lead to migraines in men. One of the many long-term effects of childhood abuse may be migraines and post-traumatic stress. While the exact reasons why childhood sexual abuse can cause migraines are not fully understood, there is a need for advancements in research on how childhood sexual abuse might trigger migraines in men. Men with childhood trauma are more likely to suffer from migraine related to PTSD. Although people with migraines are more likely to experience PTSD than people without migraines, male migraineurs may be even more likely to experience PTSD than female migraineurs. Though this research does not establish definite causation of childhood trauma and men's migraines, the research suggests that there is a strong probability that some men with migraines have had traumatic experiences of being sexually abused and the long-term consequences of it can cause profound effects on men, their families, and society. Therefore, insights into identifying the link between childhood sexual abuse in men with migraines should be explored to add to the literature.

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