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Traumatic Brain Injury (TBI) and Domestic Violence: a Beginner's Guide for Professionals

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Abstract

Ranging from "mild" to "severe" in nature, traumatic brain injuries (TBI) occur when an individual sustains an injury that alters the normal physiology and neurology of the brain. TBIs are characterized by a range of symptoms including disturbances in executive function, sensory processing, affective regulation, and adaptive functioning. Despite these symptoms, TBIs often go unrecognized and untreated, particularly in the survivors of intimate partner violence (IPV). In fact, a comprehensive literature review concluded that TBIs are sustained by 30% to 74% of IPV victims seeking assistance from places like emergency care providers and shelters. Despite the magnitude of this problem, many survivors of IPV do not receive assistance or treatment, resulting in a diverse range of health and social consequences. Even in the instances where survivors of IPV with TBIs are identified, these individuals often struggle to benefit from such services. To raise awareness of this issue among advocates and professionals, this article provides overviews of TBI and IPV, summarizes their interconnectedness, reviews screening and assessment considerations, and discusses treatment and interventions for this population.

Keywords : Domestic Violence; Intervention; Prevention; Screening; Traumatic Brain Injury

Introduction

TBI: Overview

Affecting an estimated 1.75 million individuals in the United States each year [1], traumatic brain injuries occur when an individual sustains an injury (e.g., a blow to the head) that alters the normal physiology and neurology of the brain. TBIs can range from "mild" to "severe" in nature, resulting in temporary to long-term alterations in brain functioning [2]. When a blow to the head results in a TBI, the individual experiences a broad range of symptoms including disturbances in executive function (e.g., information processing, short- and long-term memory, and attention), sensory processing (e.g., blurry vision and sensitivity to lights and sounds), affective regulation (e.g., mood swings and depression), motor impairments (e.g. ataxia, apraxia), sleep (e.g., insomnia), and adaptive functioning (e.g., decision-making and problem-solving) along with frequent headaches and migraines [3-8]. In short, a TBI can alter the ways that an individual thinks, feels, and acts.

Despite the devastating symptoms of TBI, many misconceptions of TBI persist. Many people do not recognize the wide array of symptoms that brain injuries can have on an individual. In fact, many people do not realize that a substantial brain injury can occur without any loss of consciousness [9]. As a result, many incidents of TBI go unrecognized and untreated, which draws into question whether or not prevalence estimates are gross underestimates [10]. This public health concern is referred to as a "silent epidemic" [11]. This is problematic because untreated symptoms of TBI can contribute to a vulnerability of victimization, explosive, and aggressive conduct [12], depression [13-15], self-harm and suicidal behaviors [16], and a higher probability of sustaining another traumatic brain injury. One group that may be prone to suffering TBI and not receiving adequate treatment are the survivors of intimate partner violence (IPV). Unfortunately, there is a dearth of research on this topic. Nonetheless, injuries to the head commonly occur among the survivors of IPV. In many instances, it is very possible

that survivors of IPV sustained one or more TBIs during their abuse, which often goes on for an extended period of time [17]. This is particularly troubling because the effects of TBI are often exacerbated by subsequent TBIs [18].

Domestic Violence: Overview

Broadly defined, domestic violence is the use of physical or other psychological harm in a domestic setting against a romantic partner, child, parent, relative, or other cohabitant [17]. Domestic violence may include a combination of physical, sexual, emotional, and verbal abuse. In many cases, this pattern of domestic violence emerges as a systematic attempt to control another person's actions and life [19-21] Domestic violence affects individuals regardless of age, gender, sex, race, ethnicity, sexual orientation, religion, or socioeconomic status. In physical abuse, for example, this can range from threatening physical harm against another individual to repeatedly beating an individual. In instances where there is a blow to the victim's head (either with a hand or an object), the presence of a traumatic brain injury is commonplace. One of the most common types of domestic violence is intimate partner violence (IPV), which occurs when the domestic violence is perpetrated by an individual against their romantic partner [19,20].

Although the prevalence estimates vary widely, Smith et al. [22] estimate that approximately 20 people suffer intimate partner violence each minute in the United States. Similarly, another study estimated that IPV impacts approximately 4.8 million women and 2.9 million men every year in the United States [23]. The numbers are even more staggering across the lifetime. Smith et al. [22] report that 33% of women and 25% of men suffer from IPV at some point during their lives, with 25% of women and 14% of men suffering from severe IPV at some point during their lives. Similarly, those who have suffered a traumatic brain injury, or multiple injuries, are at higher risk for being the perpetrator of IPV against others. In a study conducted by Farrer et al. [24] the occurrence of TBI among IPV offenders was significantly higher than the occurrence of TBI within the general population.

This could be associated with lowered cognitive abilities, and propensity to impulsivity and poor judgement that can occur after a TBI. Behavior and mood disorders are common after TBI which can lead to agitation, aggressiveness, and even violence [25]. Additionally, children of a parent with a history of TBI may be at increased risk of physical or emotional child abuse due to the same deficits [26]. These prevalence estimates likely underestimate the magnitude of the IPV problem in the United States. This is because it is common for individuals who suffer from IPV to not contact the authorities or confide in family or friends [23]. Reporting IPV is highly unlikely among vulnerable populations like those who are homeless or involved in the criminal justice system. To combat the subsequent consequences of TBI, there is a strong need for greater awareness of the relationship between IPV and TBI, particularly among professionals who work with vulnerable populations. To combat the effects of TBIs, professionals working with vulnerable populations should work to increase the education and resources regarding IPV.

TBI and Domestic Violence: Exploring its Interconnectedness

Survivors of IPV are highly likely to suffer injuries to the head. This could result from being hit in the head, being shoved and bumping one's head against a wall or something else, strangulation, or even arduous shaking. In fact, Varvaro and Lasko [27] found that 36% of women who suffered from IPV were injured in the head or neck. Other research estimates that somewhere between 50% and 90% of IPV incidents include injuries to the head or strangulation [28-30]. Similarly, Monahan and O'Leary [31] reported that over 90% of domestic violence acts involve blows to the head or neck. Many of these head and neck injuries likely result in TBI [32]. For example, a comprehensive literature review concluded that TBIs are sustained by 30% to 74% of IPV survivors seeking assistance from places like emergency care providers and shelters [33]. In light of these findings, there is great concern for TBI among survivors of IPV.

Because IPV is often a pattern of behavior that occurs over time rather than a single incident, survivors of IPV are prone to multiple TBIs [18]. For example, in a sample of women living in a shelter for IPV survivors, each woman, on average, reported experiencing five TBIs in the preceding 12 months, with 30% of the women experiencing at least 10 TBIs in that time period [34]. In another study of 99 battered women, 75% reported experiencing at least one TBI from IPV and 50% reported experiencing multiple TBIs from IPV [18]. Experiencing a subsequent TBI prior to recovery from an initial TBI is particularly dangerous because it increases the risk of serious and permanent injury such as chronic traumatic encephalopathy [33].

Despite the magnitude of this problem, many survivors of IPV do not receive assistance or treatment [33]. Sometimes, this may be due to survivors of IPV not realizing that they have suffered a TBI [35]. Other survivors of IPV may recognize the presence of TBI symptoms, but do not understand the potential for long-term effects. Also, survivors of IPV often have more pressing concerns to address following their assault such as making sure that their life is not in danger, taking care of their children, or finding shelter and food [26] Compounding the issue, research suggests that the symptoms of TBI often persist for an extended period of time. For example, Monahan and O'Leary [31] reported that approximately 60% of female survivors of IPV are still suffering from TBI symptoms at least three months after sustaining the TBI injury. Regardless of the reason and the longevity of the symptoms, many survivors of IPV do not seek or receive adequate medical and psychological care for their brain injuries [35].

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When TBI goes untreated in survivors of IPV, there are a diverse range of health and social consequences, many of which are commonplace among individuals who suffer from only IPV or TBI [18,36-38]. These consequences are particularly harmful in cases where post-concussive syndrome is present. Post-concussion syndrome is a complex disorder that can occur after sustaining a concussion in which various symptoms, such as the ones mentioned previously, can last for weeks and sometimes months after the injury [39]. Foremost, as supported by research on women living in domestic violence shelters, TBI results in impairments of executive function (e.g., cognitive flexibility and attention), short- and long-term memory, learning capabilities, decision-making, problem-solving, self-motivation, and behavioral control [31].

Accompanying these cognitive impairments, survivors of IPV with TBIs are also prone to many forms of psychopathology including anxiety, mood (e.g., depression), post-traumatic stress, and sleep (e.g., insomnia) disorders along with low self-esteem, impulsivity, irritability, aggression, and self-harm (Roberts & Kim, 2007) [18]. In addition to these cognitive and psychological issues, survivors of IPV with TBIs are also prone to risky behaviors. This may take the form of serious abuse of alcohol and drug use or unsafe sexual activities Le et al. [40]. Along similar lines, survivors of IPV with TBIs may exhibit impulsivity and aggressive tendencies. Risky and erratic behaviors often place the survivor at risk for further harm and greater victimization, particularly when they remain in the same home as their abuser [34]. All of these compounding issues make it difficult for survivors of IPV to escape from a dangerous situation, find a new place to live, care for children, find and receive treatment, and maintain employment.

Even in the instances where survivors of IPV with TBIs are identified, these individuals often struggle to benefit from such services. In the context of legal settings, the cognitive and memory impairments of these conditions make it difficult for the survivor to communicate with authorities [24]. The survivor may struggle to recall the incident or even communicate in a consistent and coherent manner. Additionally, their emotional symptoms secondary to their TBI often impair their communication and interpersonal relations [41]. Furthermore, even when removed from the abuse, survivors of IPV with TBI can still experience difficulty in domestic violence shelters. Here, survivors can have issues due to sensory sensitivities (e.g., issues with bright lights and loud noises) and trouble complying with complicated or difficult rules [41]. Because these survivors often have nowhere else to turn, noncompliance in these settings can often contribute to returning home to their abusers.

To increase the likelihood of treatment and improve prognosis, there is a need for increased awareness of the links between IPV and TBI among professionals likely to encounter this population [42]. In fact, there is a general lack of understanding of the relationship between IPV and TBI among a range of service providers. This contributes to TBI going unrecognized during routine medical and psychological assessments, which limits the potential for treatment [43]. Even staff in domestic violence shelters are often unfamiliar with TBI and the standards for care with this condition [44]. There are a number of steps that can be taken to alter this trend of inadequate services. Foremost, routine screening for TBI should be commonplace in medical, legal, and treatment settings such as emergency rooms along with domestic violence shelters. Second, professionals likely to come in contact with survivors of IPV should receive ongoing training and education on TBI [42].

This is especially important with regard to first responders such as police officers who might encounter a domestic violence situation. To be prepared, they should have a protocol in place for getting further medical attention for survivors of IPV who may have sustained a head injury. However, in most areas this has not been implemented due to the lack of existing training and education programs and opportunities on TBI in IPV situations [45]. Third, sophisticated and nuanced research is needed to better understand the nature of TBI and how it can best be treated among survivors of TBI [43]. The findings from this work can better inform training and education programs in this field [32].

Screening Considerations

Regardless of the severity of a TBI, these injuries often go undetected and, as a result, untreated [35]. There are several reasons for the under-identification of TBI [46]. First, many survivors of IPV do not seek treatment and often attempt to conceal the abuse that they have suffered [47]. For example, Sosin, Sniezek, and Thurman [48] estimated that 20% or more of brain injuries that are accompanied by a loss of consciousness do not get disclosed to doctors. This may be due to fear of retaliation or potential legal ramifications [49]. Second, even among survivors that seek treatment, TBIs are commonly overlooked in comparison to more visible injuries [43]. Third, there is no universal screening for TBI in settings like emergency rooms or domestic violence shelters where survivors of IPV are commonly seen. This lack of identification is grave, in light of the potential negative consequences like exacerbation of symptoms and continued exposure to IPV.

To address this under-identification of TBI, individuals who have experienced IPV or are at risk to experience IPV should be systematically screened for TBI. This is essential to ensure adequate diagnosis and treatment to limit short- and long-term effects of TBI [42]. Not only does screening make sense in domestic violence shelters, but also in medical settings. This could include the emergency room or obstetrician-gynecologist offices [50,51]. To maximize the effectiveness of increased screening efforts, professionals working in these settings should receive advanced training and education to help facilitate their recognition and treatment of IPV and TBI (Langlois et al., 2008). To improve the effectiveness of these screening efforts, relevant

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and appropriate questions must be asked by professionals and brief screening tools offer the best path forward [52].

One suitable option is the HELPS Brain Injury Screening Tool [53]. This 5-item instrument assesses if there has been a brain injury, if the injury resulted in an emergency room visit, whether or not there was a loss of consciousness or confusion, and the presence of any consequences as a result of the brain injury. Nonetheless, the HELPS and most other TBI screening tools have not been developed for use in individuals with IPV [54]. Going forward, research must investigate the effectiveness of these TBI screening tools in the survivors of IPV. In addition to the use of screening tools, professionals that are likely to encounter survivors of IPV should be familiar with red flags or warning signs of TBI [52]. Physical symptoms including headaches, nausea, and seizures are commonplace. Additionally, issues with equilibrium or balance can occur after a TBI. Finally, individuals with TBI often experience sensory sensitivity [49].

This may range from vision problems (e.g., blurred or double vision) to an inability to tolerate bright lights or loud sounds. When these symptoms or a positive screening are present, additional assessment and evaluation resources are warranted [52]. There are a number of topics that must be covered during the assessment and evaluation of a client that may have experienced both IPV and TBI. Foremost among these topics are cognitive, behavioral, and adaptive functioning symptoms. Cognitive symptoms common among individuals with TBI include decreased information processing speed, inattention, and short- and long-term memory deficits [55]. Behavioral symptoms of TBI may include affective dysregulation, disinhibition, impulsivity, aggressiveness, irritability, and sleeping issues. Adaptive functioning deficits could include learning impairments, poor decision-making and problem-solving, and disorganization [15]. Failure to adequately consider the presence and cause of any of these symptoms will contribute to diagnostic issues.

Because many of the symptoms of TBI often characterize other disorders too, there is a great potential for misdiagnosis and missed diagnosis [43]. This may simply be confusing the symptoms for another disorder or not realizing the presence of co-occurring disorders. For example, survivors of IPV and individuals with TBI both often exhibit common symptoms of psychopathology such as anxiety and depression [56-58]. Assessment for TBI can also be complicated by the residual effects of a prior TBI and cause difficulty knowing the true impact of a subsequent TBI. The consequences of inaccurate diagnosis on case management planning and treatment can result in ineffectual programming and, in some cases, iatrogenic effects. As such, comprehensive differential diagnostic procedures that incorporate medical, psychiatric, psychological, and neurological aspects are imperative [55].

Appropriate screening and assessment procedures have the potential to accurately identify survivors of IPV with TBI. To improve the likelihood of this, systematic research in this area is needed to help inform and improve such diagnostic processes [43]. This includes the development of new screening tools to detect TBI in the specific population of IPV survivors. Once properly identified, treatment and support services have the potential to improve outcomes for survivors of IPV with TBI [59].

Intervention Considerations

Survivors of IPV with TBI have the potential to benefit from treatment and other interventions [34]. This is particularly true when these clients receive treatment promptly after the TBI, which maximizes the chance of strong recovery and good prognosis [33]. In such instances, the long-term effects of concussions and many incidents of brain damage have the potential to be significantly improved when proper supports, services, and interventions have been put into place. Nonetheless, survivors of IPV with TBI are often reticent to pursue treatment due to feelings of shame, guilt, or fear [43]. This reticence is exacerbated when the individual is still enduring abuse, poverty, and other life stressors along with comorbid psychopathology. Additionally, it is common for survivors of IPV to deny or minimize the severity of the assaults that occurred against them both due to adesensitization to physical injury as well as the psychological need to compartmentalize the physical abuse in order to cope with the situation [43].

To combat this reticence and increase the likelihood of treatment, professionals must discuss assessment and treatment opportunities with the client in a positive tone with dignity and respect [43]. Once thoroughly assessed and diagnosed, treatment options for survivors of IPV with TBI include physical rehabilitation, cognitive rehabilitation, occupational rehabilitation, psychological therapy, surgery, and medication [60]. In comparison to survivors of IPV without TBI, survivors of IPV with TBI likely need more intense and expansive services. For example, addressing issues of empowerment and self-efficacy is complicated by the presence of cognitive and neurological deficits [61]. As such, professionals will likely need to account for and match services to the individual needs and capabilities of the survivor [34]. Additionally, if the survivor of IPV continues to reside with the perpetrator, it is important to consider how to engage them in treatment, given that they likely have greater stressors to contend with. Referral to a TBI specialist can help ensure that the survivor's needs are accounted for in the treatment plan. As always, treatment planning should be done with awareness of the available options in the survivor's community [43].

There are several treatment targets that should be considered for survivors of IPV with TBI. First, affective and behavioral regulation issues are commonplace among individuals with TBI [32]. These often manifest themselves in the form of disinhibition, impulsivity, risky actions, anger, and aggression (Langlois et al., 2008). To prevent the consequences of such issues, addressing affective and behavioral management techniques during treatment holds promise. Additional research

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on interventions in this realm would be beneficial. Second, problem-solving abilities are often compromised by TBI symptoms like disinhibition and organizational skills. This is likely challenging for professionals because empowering clients to make better decisions is an essential component of many IPV treatment programs [62]. Employing formal strategies and techniques to build problem-solving strategies could be crucial in addressing this issue [63]. Survivors should be coached to be patient, take the necessary time to consider different options and their consequences, and select the option that is best for them in the short- and long-term [43].

Third, occupational functioning is often impaired by the symptoms of TBI and, in many instances, this can result in unemployment and poverty [64]. To prevent these deleterious outcomes, survivors of IPV with TBI may require rehabilitation and training to relearn some of the skills that they possessed prior to the TBI [65]. In such instances, referrals to vocational rehabilitation and other training programs may be indispensable [43]. When successful, survivors of IPV with TBI may return to their career and garner the benefits of self-sufficiency and social interactions (Riggs et al., 2000). In addition to these targets, safety planning is something professionals must do with survivors of IPV with TBI [43]. This can be described as the process of identifying strategies that augment the individual's safety. For example, these strategies principally focus on the avoidance of dangerous and harmful intimate partner violence and other forms of abuse [43].

In some instances, this may require writing down a list of tasks or activities that should be completed in a specific order. Any safety plan must consider the symptoms, needs, and capabilities of the survivor. Once established, the safety plan should be reviewed frequently in a manner that is appropriate given the survivor's strengths and weaknesses [43]. Beyond these specific treatment targets and activities, there are several tips that professionals should consider when working with survivors of IPV with TBI. First, professionals can account for attentional deficits by minimizing distractions, meeting in quiet and calm environments, keeping meetings short, and taking regular breaks. Second, professionals can help improve comprehension by discussing one topic at a time, breaking up topics into easily digestible pieces of information, going at a slow and deliberate pace, avoiding open-ended questions, and regularly verifying that the client understands [66].

Third, professionals can proactively limit the impact of memory impairments by writing information down for the client, creating and using checklists, introducing daily planners and calendars to the client, incorporating journaling into sessions, and not being afraid to repeat information. These efforts will be most effective when services are provided to the client in a reassuring, supportive, and respectful manner. Fourth and most importantly, interventions should be tailored to the psychological, behavioral, and emotionals needs of the client [63]. Fifth, it is very important that the professionals working with the client are candid regarding the treatment, as it is often difficult for survivors of IPV to trust others.

Prevention

The need for prevention efforts cannot be underscored enough. While secondary prevention of safety planning for survivors of IPV with a TBI is extremely important to reduce the likelihood of them experiencing future IPV, primary prevention of IPV and TBI (i.e. the prevention of the initial occurrence of these situations) would be the ideal situation. Primary prevention efforts could be achieved through education and training in schools, legal settings, shelters, and residential treatment settings with potentially vulnerable populations [63]. Training should focus both on prevention of IPV, but also informing the participants regarding potential sequela of physical violence such as TBIs [67-68].

Conclusion

As highlighted in this article, IPV often results in TBIs with devastating symptoms. Survivors of IPV with TBI not only have difficulty extricating themselves from dangerous situations characterized by abuse, but also suffer from difficulties in every other facet of their life from social to occupational functioning. Unfortunately, TBI often goes unrecognized in survivors of IPV due to lack of awareness among professionals and difficulties in the screening, assessment, and diagnostic processes. As a result, survivors of IPV with TBI often go without the treatment and interventions that would benefit them. To overcome these issues, there is a strong need for education and training among professionals working with survivors of IPV, law enforcement officers, and medical professionals. Only through increased awareness and recognition can the survivors of IPV get the treatment and intervention services that they need.

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