Effects of head trauma from intimate partner violence largely unrecognized

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While there is an abundant amount of research about traumatic brain injuries in athletes and those serving in the military, the same data is scarce when it comes to concussions and head and neck injuries

sustained due to intimate partner violence.

Carrie Esopenko, assistant professor in the Department of Rehabilitation and Movement Sciences in the Rutgers School of Health Professions says that the World Health Organization estimates that one in three women will experience intimate partner violence (IPV) in her lifetime, and studies suggest that anywhere between 30% to 90% of women who experience physical abuse at the hands of an intimate partner experience head trauma. Yet not enough data is being collected to understand how this head trauma affects cognitive and psychological functioning as well as the underlying neural effects.

Esopenko is part of a new Intimate Partner Violence Working Group studying intimate partner violence-related head trauma as part of the Enhancing NeuroImaging Genetics through Meta-Analysis (ENIGMA) Consortium, an international, multidisciplinary group that seeks to provide a collaborative framework for large-scale analysis and neuroimaging and genetic studies in patient groups. She discusses the effect that head trauma due to intimate partner violence can have on individuals and the challenges the working group faces in gathering data as recently published in the journal *Brain Imaging and Behavior*.

What is the risk for traumatic brain injury in those who suffer abuse?

Although intimate partner violence occurs at any age, it is most prevalent in the 18- to 24-year-old age group, and older adults are also vulnerable. Males and females experience IPV, but violence against women tends to result in more severe and chronic injuries. Due to the high degree of physical aggression associated with this type of abuse, there is a significant risk for traumatic brain injury caused by blunt force trauma, being violently shaken or pushed.

Another significant concern is anoxic brain injury, which can occur due strangulation or attempts to impede normal breathing. The prevalence of head injuries in women who have sustained IPV is estimated to be between 30 percent and 92 percent, with a high proportion of these women reporting injuries as a result of strangulation. It is estimated that more than 50 percent of women exposed to intimate partner violence suffer multiple brain injuries due to abuse-related head trauma.

What are the consequences of such injuries?

Past research suggests that IPV can impact cognitive and psychological functioning as well as have neurological effects. These seem to be compounded in those who suffer a brain injury as a result of trauma to the head, face, neck or body due to physical and/or sexual violence. However, our understanding of the neurobehavioral and neurobiological effects of head trauma is limited.

Studies suggest that women who experience IPV report cognitive dysfunction, including impaired reaction time, response inhibition, working memory, attention and a range of other cognitive, behavioral and emotional difficulties. They often report a high degree of mental health disorders, such as depression, anxiety, substance use disorders, suicidal ideation and PTSD. There is evidence that intimate partner violence-related brain injury also alters brain function and structure.

What is unknown about traumatic brain injury in victims of domestic violence?

While research on traumatic brain injury in other populations, like athletes and the military, has dramatically increased over the past two decades, research on intimate partner-related brain injury is vastly understudied. We need to know more about the effect of sex,

socioeconomic status, race and/or ethnicity, age at first exposure—including childhood trauma, duration and severity of IPV exposure, and psychiatric disorders on the neural, cognitive and psychological outcomes associated with IPV-related brain injuries. Knowing this can help us to predict outcomes and help personalize treatment and intervention strategies.

What are the working group's goals?

There remain important challenges to understanding the interaction between intimate partner-related brain injury and cognitive and psychosocial functioning, mental health and neural outcomes. Of importance is the identification and characterization of brain injury in this population, which is often difficult because brain trauma is often overlooked or not diagnosed in this population. By forming a global collaboration across disciplines—researchers, clinicians, first responders, community organizations and policymakers—we hope to help tailor measures that can be used across groups for consistent data collection that will enable us to combine large-scale datasets to answer these difficult questions and facilitate further translation of research outcomes to clinical care and community-based supports.

More information: Carrie Esopenko et al. A global collaboration to study intimate partner violence-related head trauma: The ENIGMA consortium IPV working group, *Brain Imaging and Behavior* (2021). DOI: 10.1007/s11682-020-00417-0

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