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PTSD and Dissociation after Motor Vehicle Accidents

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Abstract

Post-traumatic stress disorder (PTSD) is a condition developed in an individual when they experience a traumatic event. Symptoms consist of unwanted flashbacks and thoughts, physical responses, depressed mood, and severe anxiety. Those symptoms are commonly associated with peritraumatic dissociative disorder (PDD) in which a person experiences depersonalization. PTSD is commonly associated with combat; however, a common cause amongst civilians is motor-vehicle accidents (MVA). It is difficult to live with PTSD especially if left untreated. This can lead to the development of greater depersonalization. The purpose of this review is to explore the physiological measurements of PTSD in MVA victims, misdiagnosis and comorbidity, and treatment. By looking into these areas, more effective and accurate diagnosis could be produced leading to more appropriate treatment for patients with PTSD experiencing dissociation.

Introduction

Post-traumatic stress disorder (PTSD) is a condition in which an individual experiences or witnesses a traumatic incident followed by symptoms including flashbacks, physical responses, uncontrollable thoughts, depressed mood, and severe anxiety.¹ Those symptoms are commonly linked with peritraumatic dissociative disorder (PDD) in which a patient experiences depersonalization, disconnect in time, and emotional numbness in response to recollection of their trauma. PTSD and PDD are commonly associated with traumas related to war veterans in combat or victims of abuse. However, victims of motor vehicle accidents (MVA) are a civilian group that make up a substantial portion of diagnoses.² PTSD is difficult to live with if gone untreated due to the unpredictable, unwanted symptoms that can be crippling mentally and physically. The addition of PDD causes further problems such as misdiagnoses. PDD can disguise PTSD with its main symptom of detachment and therefore interrupt the treatment process.³ There is recognition and research in literature regarding PTSD and PDD, but there are still areas that could be improved on such as diagnosing PTSD earlier and more accurately. This review will explore physiological measurements of PTSD in motor vehicle accident victims, misdiagnosis and comorbidity of PTSD, and treatment.

Physiological measurements

Post-traumatic stress produces symptoms measurable via physiological testing. Subjects who experience trauma also commonly experience great dissociation from their own memory, personality, physical being, and general self-awareness. When talking about the traumatic incident, patients who experience more intense dissociation due to PTSD show results of increased heart rate and decreased autonomic reactivity.⁴

The mental toll of PTSD becomes intensified because of lingering physical pain from the severity of injuries during the accident. Less noticeable physical injuries such as soft tissue damage and whiplash are difficult to detect via traditional scanning/imaging.⁵ Chronic pain sustained from injuries caused by MVAs play a role in the repetitive nature of the flashbacks associated with PTSD.⁶ Monitoring and treating the physical pain could help the treatment of the psychological damage.

Physical injuries related to speed have no impact on PTSD symptoms. Rather, the individual's perspective, including the perceived risk of life, impacts PTSD symptoms.⁷ The relationship between injury severity and post-traumatic stress symptoms is not significant.⁸ While it seems it is the impact of accidents that affects psychological symptoms, it is actually the mental state during the accident which determines the presence of symptoms later. Nearly no connection between severity of the injury and post-traumatic stress symptoms is seen at the time of the traumatic injury, three months, six months, or twelve months after the injury.⁸

Military combat veterans may experience subjectively worse traumatic events than civilians in motor vehicle accident victims. However, one study showed lower rates of PTSD in non-injured veterans compared to civilians and similar rates of PTSD between injured veterans and civilians.⁹ If perception of life risk during the time of the trauma dictates the likelihood of developing PTSD, combat veterans are better prepared mentally and emotionally for trauma than civilians in motor vehicle accidents through their training.¹⁰ If civilians were more emotionally and mentally prepared for trauma, then it could be possible for post-traumatic symptoms to be softened.

Comorbidity of PTSD and misdiagnosis

When PTSD is present in conjunction with other conditions, this is known as comorbidity. Comorbidity is most common in PTSD of MVA survivors. One of the most prominent symptoms are depressive episodes post trauma and/or depressive states, making it the most common comorbidity of PTSD.¹ People with PTSD are up to five times more likely to develop major depressive disorder (MDD) than those without PTSD.¹¹ It is also possible to misdiagnose the two disorders entirely. Because major depressive disorder may exist prior to the trauma, MDD may be heightened by the traumatic accident and therefore misdiagnosed as PTSD.¹² If MDD is not diagnosed prior to trauma, it further clouds the differentiation between MDD and PTSD with depressive symptoms which may need to be treated differently.¹² Other comorbidities of PTSD commonly seen in car accident victims are post-concussive syndrome, chronic pain, and other psychological personality disorders such as obsessive-compulsive disorder (OCD).^{5, 13} Greater dissociative symptoms and social anxiety are found in chronic PTSD as opposed to acute.¹⁴ A large problem with PTSD, especially in conjunction with other disorders such as MDD is that it is associated with greater attempts at suicide.^{12, 14} The relationship between PTSD and other

diagnoses can be seen in Table 1. One month after an accident, it is possible for patients to score high on psychological distress testing and walk away undiagnosed then come back to be diagnosed up to 18 months after the accident.¹⁵ If MVA victims go a prolonged period of time with undiagnosed PTSD, it sets them back from receiving proper treatment.

Treatment

Cognitive behavioral therapy (CBT) is the most common type of treatment for PTSD.¹³ CBT consists of techniques such showing trauma-related images, talking through the most traumatic part of the event, having patients read descriptions of their traumatic event aloud, and creating triggers associated with the trauma for the patient to experience.¹⁶ Patients' behavioral, mental, and emotional progress is tracked throughout the treatment and continuously reevaluated by the professional to determine discharge.¹⁶

CBT for acute PTSD with comorbid MDD showed improvements after four months. When CBT was used for treating MVA survivors with PTSD, results showed improvements in personal growth and decrease in PTSD symptoms.¹⁷ Another outcome of CBT observed in MVA survivors is change in electrical brain activity which could mean change in asymmetrical brain function.¹⁸ When shown trauma-related photos, lower electrical activity in the right of the brain was recorded after CBT than before treatment.¹⁸ Patients with greater dissociation experience increased heart rate with induced trauma-related memory recall.^{4, 19} Decreased heartrate was recorded after CBT.¹⁹ Cognitive therapy consists of techniques prescribed only for the psychological diagnosis of PTSD but has also been found to help improve daily tasks hindered by chronic pain associated with MVA due to injuries, whiplash, and soft tissue damage.¹³ Even after CBT, many MVA victims still experience insomnia, a symptom common prior to treatment accompanied by night terrors.²⁰

Conclusion

Post-traumatic stress brings about both mentally crippling symptoms and unwanted physical responses. The psychological trauma and intensity of dissociation can be measured physiologically through monitoring autonomic reactivity.⁴ It can also be comorbid or undiagnosed due to dissociation or symptoms of other conditions similar to those of PTSD.^{3, 12} If more accurate and timely identification could be done, then more patients with PTSD could be treated more efficiently and effectively. This will help the fields of psychology and medicine move in the direction needed to improve the life of civilians in motor vehicle accidents. Further research on comorbid diagnoses of PTSD related to motor vehicle accidents specifically needs to be done. With that, treatment can hopefully improve to better help the proper diagnosis as well as treatment to help reduce residual symptoms.

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Secondaries: 1, 3

Table 1. Comorbidities of PTSD by percentage (%).

Comorbidities of PTSD	Percentage (%) of PTSD and comorbid diagnosis
Post-concussive syndrome ⁵	27
Chronic pain ⁶	100
Major Depressive Disorder ²¹	83
Insomnia ²⁰	48

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