

Post-traumatic Stress Disorder Following Traumatic Injuries in Adults

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ABSTRACT

The residuals of traumatic injuries from home or workplace accidents, automobile accidents, physical assault, or other unintentional human error can affect victims both physically and psychologically. Symptoms of post-traumatic stress disorder (PTSD) are common among survivors of accidents and nonsexual assaults and can impede recovery. Early identification of PTSD and timely referrals to mental health providers can greatly reduce medical expenses, disability payments, lost wages, lost work productivity, and direct mental health costs. A physician-screening tool to identify PTSD is outlined in this article and can be completed in a few minutes. Implementation of this screening following traumatic injuries can promote early diagnosis of possible psychological complications and facilitate referral to appropriate mental health professionals.

INTRODUCTION

Traumatic injuries from accidents within the workplace or home, automobile accidents, physical assault, or other unintentional human error affect a large number of individuals each year. The residuals of such accidents can range from a minor bruise or scratch to a major mutilating injury, such as amputation of arms, hands, legs, or feet. These injuries can be accompanied by profound psychological consequences that impede recovery and often prevent individuals from returning to normally productive lives. Symptoms of post-traumatic stress disorder (PTSD) are common among survivors of accidents and nonsexual assaults. The importance of early identification of these symptoms by health care professionals and timely referrals to mental health providers can greatly reduce medical expenses, disability payments, lost wages, lost work productivity, and

direct mental health costs. These are particularly important considerations with the reality of managed care and the mandate to prove the effectiveness of treatment interventions. However, the most important consideration is the reduction and remission of human suffering following traumatic injuries to individuals and their families.

It is noteworthy that severity of injury, when the injury is mutilating, does not appear to place the victim at greater risk for developing PTSD.^{1,2} Losing the tip of a finger can evoke as significant a psychological response as the amputation of an arm or a foot. Treatment providers often assume that when the physical injury is healed well enough to allow the individual to return to work or other normal activities they are mentally prepared as well. This is often when the first indication of a more complicated psychological response is present.

Individuals may have difficulty returning to work in the same environment where the initial accident occurred or they may have difficulty driving if the injury was from an automobile accident. Some may avoid social encounters or even refrain from leaving their homes. Increased agitation, difficulty initiating or sustaining sleep, lack of motivation, difficulty concentrating, increased or decreased appetite, and depressed mood may be reported to primary physicians, surgeons, and nurses and may be symptom indicators that a more serious psychological condition is present. Effective screening by medical staff can identify more serious psychological sequelae and facilitate appropriate referral and subsequent treatment interventions. Most PTSD outcome studies do not differentiate between the nature and type of traumas experienced by their subjects. This article addresses single incident traumas (Type I trauma) only. Prolonged or multiple incident traumas such as prolonged childhood sexual abuse (Type II trauma) are beyond the scope of this article.³

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BRIEF PHYSICIAN SCREENING

Many factors contribute to the etiology of PTSD including (1) individual vulnerabilities such as biological,

psychological, and sociocultural factors; (2) characteristics of the stressor itself; and (3) post-exposure variables.⁴ Presence of preexisting psychopathology, prior exposure to traumatic events, behavioral tendencies and psychosocial stages of the victim, and ego strength may also be predictive factors and should be considered in any evaluation.

The affected individual's cognitive appraisal of the traumatic event also plays a significant role in the development of PTSD. Grunert and colleagues⁴ outlined 4 basic perceived causes of traumatic hand injuries sustained in work environments: (1) those due to a specific attribute of the individual such as total disregard for safety procedures, (2) those due to situational factors such as being fatigued or momentarily distracted, (3) those due to some attribute outside the individual such as missing protective railings on machinery, and (4) those due to situational factors outside the individual's control such as bad luck or being at the wrong place at the wrong time. Internal causes (numbers 1 and 2) that the individual feels he/she may have some control of in the future differ significantly from external causes (numbers 3 and 4) in which the individual feels continually vulnerable and out of control. (For further discussion of internal versus external and stable versus unstable causality consult Weiner.⁵)

The presence of nightmares and flashbacks, indications of avoidant behavior, and signs of hyperarousal and increased startle response are the 3 symptom clusters defined in the DSM-IV R⁶ for post-traumatic stress disorder. Careful screening for these symptoms as well as causal attributions can occur in less than 5 minutes and can alert physicians and health care staff to the possibility of a more serious psychological condition.

Screening should include such questions as:

- Have you experienced any vivid thoughts about the accident/injury? (If the answer is yes, expand to ask about recurring flashbacks and nightmares).
- What do you believe is the cause of your accident/injury? (This attributional component will alert you to feelings of being out of control. Individuals who are left feeling vulnerable and open to another accident/injury at any moment have a much greater likelihood of developing PTSD).
- Are you able to go back to the place/location where the accident/injury occurred? Are you able to go back to doing the activity you were engaged in at the time of the accident/injury? (This signals avoidant behavior and although it is not predictive of Type I PTSD, it is predictive of the severity of the psychological distress).

- What do you think could be done to prevent the accident/injury? (This again taps into attributional and self-control issues).

Screen for other symptoms of stress:

- problems with concentration/motivation
- sleep disturbances
- hypervigilance/increased startle response
- increased irritability
- changes in mood
- changes in appetite

Careful assessment as to circumstances surrounding the accident or injury and the individual's response to the event are valuable tools in helping alert health care professionals to developing psychological problems. Early intervention can reduce time of suffering and time lost from life responsibilities.⁷ If early intervention is to occur, professionals across health disciplines must be trained in the early recognition of trauma prognostic indicators.

TREATMENT INTERVENTIONS FOR PTSD

Historically exposure-based interventions⁸ have dominated the literature. These involve either imaginal reliving of the traumatic event or in-vivo exposure to the place where the traumatic event occurred. However, the preponderance of recent trauma outcome studies has indicated that incorporating cognitive restructuring and exposure-based interventions designed to enhance emotional processing of traumatic events to be the most effective treatments for PTSD.⁹ Further research at the Medical College of Wisconsin by Grunert and colleagues is now suggesting that different cognitive-behavioral therapy (CBT) interventions may need to be applied according to the individual's primary cognitive emotions surrounding the traumatic event.¹¹ For example, when fear is the primary emotion, exposure-based interventions alone ameliorate PTSD symptoms most of the time. However, when the primary PTSD emotion is not fear (e.g., anger, guilt, shame, disgust) a cognitive component of reprocessing is necessary for symptom remission. This notion is reinforced by recent brain studies showing that the processing of fear may be different than that of other negative emotions. Limbic structures (e.g., the amygdala) are involved in the processing of fear, whereas higher cortical structures (e.g., the frontal neocortex) are involved in the processing of more complex negative emotions, such as guilt, shame, disgust.¹⁰ Careful consideration in choosing and applying appropriate treatment interventions based on primary emotions surrounding the traumatic incident is necessary. A PTSD treatment algorithmic

has been developed to help clinicians determine the best treatment intervention and is outlined in *Overcoming Roadblocks in Cognitive-Behavior Therapy with PTSD: A New Algorithm Treatment Model*.¹¹ Clinicians working with older adults need to be aware that traumatic events experienced earlier in life (even childhood) may be associated with symptoms of PTSD in late life.¹² These symptoms may have persisted chronically since those events, or they may re-emerge when the affected individual encounters reminders of the earlier trauma, such as bereavement, significant changes in physical health, or relocation to a long-term care facility. PTSD symptoms may also emerge in the context of the dementing illness.¹³

CASE EXAMPLE

Mary is a 38-year-old white female who came for psychological evaluations 5 months after an automobile accident in which she sustained some minor bruising to her head and ribs. Immediately following the accident, she was assessed at a local hospital. Diagnostic imaging revealed nothing significant and she was released with medication for pain and instructed to follow up with her primary physician. Mary continued to see her physician for fatigue, sleep disturbance, depressed mood, chronic headaches, and chest pains. During the 5 months following her accident she underwent further extensive diagnostic testing but no cause for her pain was ever discovered. At that point she was referred for psychological evaluation.

At the initial psychological evaluation, Mary reported experiencing frequent nightmares (3-4 per week) of the accident and a persistent gnawing feeling in her gut that prevented her from eating. She was having difficulty sleeping, was startling awake and then having problems returning to sleep because she felt as if she were right back at the accident site immediately following the crash. She reported increasing irritability and hypervigilance and an inability to enjoy any of her normal activities. She indicated that driving was extremely difficult and she avoided it whenever possible. She had not returned to the intersection where the accident occurred and had no intention to ever do so. When asked about the cause of the accident she described a large black truck that "came out of nowhere" and hit her broadside. She saw glass flying and heard metal screeching. She was trying to put the accident out of her mind so that "it will just go away." She had not been talking about it to anyone.

The symptom clusters of PTSD were discussed with her and she was quite relieved to have her reactions

normalized. Imaginal Exposure and Imagery Rescripting and Reprocessing Therapy (IRRT) were described as the recommended treatment intervention. IRRT is a multi-faceted, imagery focused treatment designed to facilitate cognitive restructuring of trauma-based beliefs and schemas within reliving.¹⁴ It consists of 4 components: (1) *imaginal exposure* in which the traumatic event is visually recalled and reexperienced to access primary emotional content, (2) *imaginal rescripting* in which victimization imagery is replaced with mastery/coping imagery, (3) *self-calming/self-nurturing imagery* and (4) *linguistic processing* in which the trauma is transformed into words from distressing iconic/sensory intrusive images. Mary was receptive to this intervention and was scheduled for follow up.

This psychologist initially hypothesized that Mary's fear of dying was the primary emotional distress maintaining her PTSD symptomatology. This fear, coupled with her feelings of vulnerability and loss of control, prevented her from adequately recovering from the traumatic incident. However, during the exposure phase of IRRT it became readily apparent that Mary was filled with anger and rage at the driver that hit her car broadside. He never asked about her safety nor did he accept blame for running a red light. It became apparent to this psychologist that processing emotions of anger and rage would be the primary focus of the cognitive restructuring as these were the primary emotions sustaining Mary's PTSD.

During the mastery phase of the IRRT, Mary was able to confront the driver and physically remove and restrain him until rescue personnel arrived. She then comforted her injured-self with reassurances of survival with only temporary minor bruises. Cognitive processing followed the imagery session and Mary was visibly calmer and expressed amazement at every detail that she had remembered. The session was audio recorded and Mary agreed to listen to it at home on a daily basis.

Mary reported a complete absence of any flashbacks or nightmares at the following appointment a week later. She indicated complete remission of headaches and chest pain. She reported normal sleep and appetite. She had also been able to return to the intersection where the accident occurred. She had openly talked about the accident with her husband and friends.

This case example exemplifies the need for early assessment of risk factors for the development of PTSD. Mary was experiencing vivid intrusions of the automobile accident and felt totally out of control fearing that an accident could again happen at any time. She

avoided the site where the accident occurred and was unable to drive an automobile without extreme distress. In addition, she was experiencing sleep disturbance, hypervigilance, difficulty with concentration, irritability, loss of appetite, and depressed mood. Headaches and other physiological complaints remained problematic and prevented her from returning to pre-morbid functioning. No organic cause for her pain was ever discovered. Psychological referral and subsequent treatment led to a complete remission of not only her PTSD symptomatology but her somatic complaints as well.

SUMMARY

Early diagnosis and intervention for any medical or psychological condition remain the best prognostic indicator for recovery. The physician screening outlined in this article can be completed in a few minutes and promote appropriate diagnosis of possible psychological complications following traumatic injuries. Timely referral to mental health professionals trained in the treatment of PTSD can reduce individual suffering and eliminate costly diagnostic testing in relation to physical complaints that are often masked by undiagnosed psychological conditions.

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