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FACTORS CONTRIBUTING TO POSITIVE AND NEGATIVE OUTCOMES OF INVOLVEMENT IN TRAUMA FOR RAILROAD WORKERS

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ABSTRACT

Railroad engineers work in a profession where the probability of being involved in a critical incident, including derailments, collisions and near misses, as well as other fatalities and suicides on the tracks are likely to occur (Weiss & Farrell, 2006). According to Napper, 1998, the average train driver will be involved in three fatal accidents during a 25-year career. Recently, several studies have been conducted investigating Post Traumatic Growth (PTG), or the occurrence of a positive change or attitude in the individual following exposure to traumatic events, however; no studies to date specifically address PTG as a concept applicable to those in the transportation industry exposed to work related trauma. Recent research suggests that positive cognitive processing (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004;), personality variables extraversion and openness to new experiences (Dorfel, Rabe, & Karl, 2008;), and social support (Regehr, et al., 2007) have the potential to influence the emergence of PTG.

The overall purpose of this study is to gain a better understanding of the negative and positive effects of traumatic events on railroad workers. In order to better understand the effects of trauma, it is a logical next step to study personality factors, social support, and cognitive coping combined in a regression analysis to sort through the relative contribution of these variables to the occurrence of growth and other consequences.

Method

Measures

PTSD Checklist – Specific (PCL –S) is a 17-item self-report measure of the 17 DSM-IV symptoms of PTSD (Weathers, et al, 1993). Convergent validity is supported by high correlations with the Mississippi scale for PTSD ($r = .93$), the Impact of Event Scales (IES) ($r = .90$), the MMPI PTSD subscale ($r = .77$), and the Combat Exposure Scale ($r = .46$).

The Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) is a 21-item self-report measure. Tedeschi and Calhoun (1996) reported the internal consistency of the PTGI as $\alpha = .90$. The internal consistency of each factor is as follows: new possibilities ($\alpha = .84$); relating to others ($\alpha = .85$); personal strength ($\alpha = .72$); spiritual change ($\alpha = .85$); and appreciation of life ($\alpha = .67$).

The Big Five Inventory Personality Test (BFI) consists of 44 items that measure the five factor model (FFM); (John, Donahue, & Kentle 1991). The five subscales include Extraversion (8 items), Agreeableness (9 items), Conscientiousness (9 items), Neuroticism (8 items), and Openness (10 items). Alpha reliabilities were reported ranging .75 to .80 for subscales and 3-month test-retest reliabilities from .80 to .90 (John & Srivastava, 1999).

The Cognitive Processing of Trauma Scale (CPOTS; Williams et al., 2002) is a 17-item scale measuring cognitive processing of traumatic events that an individual experiences.

Social Support (House & Wells, 1978) measures support from sources: immediate supervisor, other people at work, and husband/wife/partner (skips this response if single), and friends and relatives and had alpha coefficients ranging from .73 to .83 (House and Wells, 1984). Jenkins (2004), found the reliability coefficient for the House and Wells scale to be .84

Results

One hundred and ninety five employees responded to an invitation to complete the online questionnaire from computers stationed at work. Out of the 195 potential participants, 138 fully completed the questionnaires ($n = 138$) and after culling for missing data and incomplete forms the final sample used in all subsequent analyses was 136 participants. Linear regression analysis was used to determine the contribution of having a work related traumatic event in predicting PTSD symptoms. When number of work related traumatic events was the independent variable and PCL-C scores the dependent variable results indicated that number of work related trauma significantly predicted a portion of variance of PTSD in transportation workers, $R^2 = .109$, $p < .001$. When PTG scores were entered as the dependent variable the number of work related traumas did not significantly predict PTG in transportation workers, $r = .024$, $R^2 = .001$. However, variance in PTSD was explained by number of work traumas, number of life traumas, negative cognitive coping, and positive cognitive coping $R^2 = .25$, $F(2, 125) = 7.32$, $p < .05$.

Discussion

The number of work traumas, number of life traumas, positive cognitive coping, and negative cognitive coping were shown to predict PTSD. Positive and negative cognitive coping and social support were predictors of PTG in the model. Results also showed that cognitive processing, as measured by the CPOTS, was a significant contributor to the occurrence of PTSD and PTG. Thus, developing cognitive based programs that help drivers to develop the necessary skills to prepare for and cognitively process trauma appropriately may be helpful. Alternatively, using cognitive coping strategies such as denial and regret may not be as helpful and impact their psychological well-being.

Social support was also shown to be a significant predictor of PTG. Unfortunately, working in the railroad industry often can be a very isolating life due to long and unpredictable hours of work. Having a work related trauma while employed driving a train seems to be almost inevitable for most railroad employees. Understanding factors that contribute to negative and positive outcomes following a work related traumatic event is important to help workers perform optimally in their jobs, as well as their personal lives.