



The Impact of Post-Traumatic Stress Disorder on Addiction to Information over Searching and Information Avoidance

Anthony Thomas Fantasia¹; Gayle Prybutok^{2*}; Victor Prybutok³

¹University of North Texas, USA.

²Associate Professor, and Program Coordinator for Health Services Administration, Department of Disability and Addiction Rehabilitation, University of North Texas, USA.

³Toulouse Graduate School, University of North Texas, Denton, TX 76203, USA.

*Corresponding Author(s): Gayle Prybutok

Associate Professor, and Program Coordinator for Health Services Administration, Department of Disability and Addiction Rehabilitation, University of North Texas, USA.

Email: Gayle.Prybutok@unt.edu

Abstract

Objectives: This study identifies the relationship that exists between PTSD and addictive information-seeking behavior in a sample population of military veterans diagnosed with PTSD.

Methods: A thematic narrative analysis of transcripts from semi-structured interviews was used to identify indicators of addictive behavior in the study population. Once themes of addiction were identified, an additional round of analysis was performed on the participants' responses to identify categories of addiction or addictive behavior in four military veteran service members diagnosed with PTSD. The Mayo Clinic's symptoms of drug addiction were adapted as a guide in identifying addictive behaviors. These include: feeling that you have to use the addictive behavior regularly-daily or even several times a day; having intense urges for the addictive behavior that block out any other thoughts; over time, needing more of the addictive behavior to get the same effect; displaying larger amounts of the addictive behavior over a longer period of time than you intended; making sure that you maintain the addictive behavior as long as possible; spending money on the addictive behavior, even though you can't afford it; not meeting obligations and work responsibilities, or cutting back on social or recreational activities because of the addictive behavior; continuing to exhibit the addictive behavior, even though you know it's causing problems in your life or causing you physical or psychological harm; doing things to get the feeling from the addictive behavior that you normally wouldn't do, such as stealing; driving or doing other risky activities when you're exhibiting the addictive behavior; spending a good deal of time developing the addictive behavior, exhibiting the behavior or recovering from the effects of the behavior; failing

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in your attempts to stop exhibiting the addictive behavior; and experiencing withdrawal symptoms when you attempt to stop exhibiting the addictive behavior [1].

Results: Analysis of the transcripts for the four military veterans reveals addictive behavior related to information-seeking behavior in three (75%) of the participants. All three indicate tendencies to over-search for information that they feel is necessary by querying several different sources to the extent to which the process becomes burdensome and overwhelming in order to feel better informed about an important topic. They all have also discussed their tendencies to willfully avoid the information-seeking process altogether when the results of the search present the possibility of disruption of their peace of mind or worldview. All four indicated that the excessive extent to which they will seek information is related to both the perceived importance of the information and the level of trust they have in the available sources. Low trust in information sources leads to an increase in the number of sources searched for validation by the PTSD population.

Conclusions: Military veterans display a greater tendency to develop addictive information-seeking behavior as a complication of their PTSD.

Introduction

Post-Traumatic Stress Disorder (PTSD) and addiction are often discussed as individual maladies affecting people or populations. While their individual impacts are significant, their comorbid impact is far greater. There are several studies that address PTSD and addiction in the established literature, but this study addresses the military veteran population diagnosed with PTSD or Post-Traumatic Stress Disorder (PTSD) a psychological and physiological response to prolonged trauma and stress [2]. Without an effective stress relieving coping mechanism, cortisol builds up in the bloodstream, negatively impacting every system in the body over time. When high cortisol levels are sustained over time [2], every system within the human body is eventually affected.

Post-Traumatic Stress Disorder (PTSD) was officially recognized as a legitimate mental disorder by the American Psychological Association (APA) in 1980. Although there was some controversy early on, the PTSD diagnosis has proven valuable by filling a long-existing gap in psychiatric theories and practices [3].

In their 1999 study, [4]. Leverenz JB, Wilkinson CW, Wamble M, Corbin S, Grabber JE, illustrated how long-term exposure to increased levels of cortisol in the bloodstream can lead to hippocampal neuronal loss, resulting in losses of executive functions like logic and reason. They also point out the inverse growth relationship that exists between the hippocampus and the amygdala. When the hippocampus begins to lose neuronal mass, neither the amygdala's growth nor its functions are restricted any longer. As cortisol levels rise and the amygdala continues to grow and exert a stronger influence on perceptions, the risk of developing PTSD, Cushing's Syndrome (hyper cortisol), and Addison's Disease (hypo cortisol), along with potential increases in the risk of developing Alzheimer's Disease and other forms of dementia due to the evidence of dendritic death in the mice used in their study.

They [5] point out, in their study of patients with comorbid

PTSD and Alcohol Dependency (AD), the relationship that exists between PTSD and AD, and the increased risk of the patient terminating treatment for AD, especially when the treatment focuses primarily on alleviating and mitigating PTSD symptoms. In this study, the authors observed that respondents demonstrating an active, and often heavy level of alcohol consumption were among those with a PTSD diagnosis.

Young HE, Rosen CS, Finney JW [6] reported that patients with comorbid PTSD and AD or other Substance Use Disorders (SUDs) are more likely to experience negative outcomes when seeking treatment for their substance abuse. In this study, of the four veteran participants with a PTSD diagnosis, three (75%) expressed a negative future outlook on life. One of the key areas of interest in this research is the impact on the future outlook of the veteran PTSD community on their resulting behavior. We examine whether PTSD has a direct relationship to addiction and addictive behavior (HA1), while a second hypothesis (HA2) explores whether a positive future outlook among the PTSD population can have a moderating effect on addictive behavior and facilitate an improved transition to a more managed lifestyle.

The Mayo Clinic [1] lists several symptoms of addiction and the means by which they can be identified in family members. A number stand out as similar to behaviors discussed by the participants in the study. The feeling that the task needs to be done on a regular basis (daily or several times a day) is commonly referenced when the members are actively involved in staying informed about a controversial, high-impact event. Intense urges that block out all other thoughts, needing more information for the same effect, taking larger amounts over time than intended, and ensuring an ample supply are universal; not confined solely to the use of a physical substance, but instead related to the search for information. Another symptom with deeper implications is the insistence on continuing to search the resource despite knowing that it is causing physical and psychological harm.

There are many studies in the literature that address PTSD and addiction to substance use and abuse. This study advances our understanding by examining the occurrence of information addiction in those military veterans diagnosed with PTSD. The information landscape is growing in size and complexity on a daily basis as information appears to be flowing into online forums at an unprecedented pace. As the impact of these current events on our lives becomes more apparent, there is a natural need to understand these impacts to adapt to concurrent changes. This study assesses the information-seeking habits of military veterans, as they existed before and after significant traumatic events, to determine if their search frequency increased or if the number of their information sources increased as a result of their traumatic exposure and PTSD.

Gentwzkow, Wong, & Zhang address the issue of over-searching in their 2018 study of ideological bias and trust in information sources. Their study focuses on the means by which PTSD sufferers form trusting relationships with information sources with uncertain accuracy. When seeking to learn in a "noisy" information environment, information-seekers encounter biases, of varying size and impact, that can challenge the seeker's trust in the source. They state in their study, that increasing the number of sources in their search may worsen the ideological differences that arise in the information as a result of the added bias. As military veterans with PTSD, the four members with PTSD indicate individual tendencies to over-search or "rabbit-hole" their searches, particularly for topics of high interest.

Information is a tool, and its usefulness is determined by the outcome of its application. Generally considered a means to an end, information can become a utility function where the user's satisfaction, rather than the information's application, is the chief measure of usefulness. In their study, the researchers explain how this transitory perspective can lead to "an incentive to avoid information". Information avoidance is a theme making numerous reappearances among two members of the study who adopted the strategy to gain an advantage for their mental health through intentional ignorance.

Research Questions and Contribution

This study explores the impact that PTSD has on the development of and recovery from addiction with a focus on maladaptive information-seeking behavior. Research shows [7] that subjects with PTSD are more prone to developing maladaptive and addictive information behaviors, such as information over-searching and information avoidance. The research findings for this study will help PTSD sufferers, their families, friends, and care providers to better understand the relationship between PTSD and addiction, and to better provide effective support and treatment to military victims. This understanding eases the burden of treatment on the veteran and improves the likelihood that the veteran will complete the treatment programs that exist, rather than abandoning treatment when the stress becomes overwhelming to them.

Methodology

A qualitative approach was used to assess the impact of trauma and PTSD on addiction in the military veteran community diagnosed with PTSD. A thematic narrative analysis was conducted, as part of an IRB-approved study (IRB-22-145), on transcripts created from semi-structured interviews conducted with fifteen (15) members of a convenience sample drawn from a PTSD-specific social-media support group with the permission of the members and the approval of the UNT IRB. Participants self-identified as having PTSD, and a subset of five of those interviewed self-identified as having addictive behaviors. Eight military veterans and seven civilian/non-military participants were interviewed to assess the impact of trauma on their information-seeking behavior and decision-making processes. The military veteran community is more likely to develop addictions and addictive behavior due to their increased likelihood of developing PTSD as a result of their military service and the operational environments in which they served. Often, military veterans with PTSD will ignore their need for treatment and therapies when those treatments seek to alleviate their PTSD symptoms [5].

This is a qualitative study using thematic narrative analysis of transcripts from subjective semi-structured interviews. Fifteen 1-1.5-hour interviews were conducted with members of a convenience sample from an online PTSD support group. Participants were recruited using an IRB-approved recruitment script posted to this Facebook newsfeed. Out of forty-five total respondents, four (8.9%) military veterans diagnosed with PTSD were asked twenty-eight semi-structured interview questions designed to ascertain the impact of trauma on their information-seeking behavior and decision-making processes. The interview process was terminated after the interviewer reached a saturation of responses.

The 1-1.5 hour-long interviews were recorded and transcribed. One interview was transcribed manually by the re-

searcher. The remaining transcripts were generated using either an automated online AI transcription service (Rev.com) or by a professional free-lance transcriptionist (UpWork.com). The transcripts were subjected to two rounds of independent validation, at which point all of the responses were aggregated into a single text file as well as an excel matrix for more efficient processing and analysis.

In the text file, each question from the interview contained each of the responses from the interviewees, identifiable by their unique participant IDs. The responses to each question were read through over four iterations. The first two iterations were used to validate the quality of the transcription, while the third iteration was used to develop general impressions for each respondent. Once general impressions were established and recorded a fourth iteration was used to identify responses that state or imply addictive behavior

Using guidelines established by the Mayo Clinic [1], member responses were reviewed for indicators of addictive behavior. Next, all military members with PTSD were partitioned into the subpopulation for this research. Then, following initial classification, the responses for the final research population were reviewed with a focus on identifying addictive traits involving substance abuse and information-seeking practices. Three military members (75%) with PTSD self-identified as including excessive alcohol consumption as part of their regular social interactions. Four military members (100%) disclosed a frequent and urgent need to find information quickly in order to understand and react accordingly. Three members (75%) disclosed a long-standing intention to avoid seeking information about politically charged or emotionally over stimulating topics. In all three instances, they expressed their overarching need to protect and preserve their emotional peace and mental health, regardless of the resulting information gap.

Results

During the transcript validation process, addictive behavior is presented in the form of information addiction and social media/media addiction. Addictive behavior can be present in a variety of forms, including an addiction to overeating, video games, cell phones, alcoholic beverages, drug abuse, or gambling. (Psychology, 2023). 9 of the 15 participants (60%) were military veterans: 5 males (55.6%) and 4 females (44.4%). Of those interviewed, 4 (37.5%) have an official PTSD diagnosis from the VA. All 4 veterans with PTSD revealed addictive behavior in the information-seeking domain. Two of the civilian/non-military volunteers (13.3%) demonstrated addictive behavior in the domain of Internet/media usage by way of over-searching for information. Six of the participants (40%) displayed addictive behavior in the form of information avoidance, choosing to actively avoid searching for information about stressful topics, typically centered around politics or public health, in order to maintain a sense of peace and calm that would otherwise be lost during an information search process.

Limitations

This research is limited by the small sample size, and the ability of military veterans to recall experiences, particularly those related to stressful events with accuracy. While only fifteen military veterans (32%) had an official diagnosis of PTSD from the VA, many other participants displayed signs and symptoms of PTSD but lacked an official diagnosis. Only those participants with a diagnosis of PTSD were included in this study. Despite

these limitations, the approach was consistent with other qualitative research in seeking saturation before stopping data collection. As a result of the following established methods, we do not believe these limitations diminish the contribution of this research.

Future work

Future work on this research will involve Latent Semantic Analysis (LSA) of the interview transcripts, using software like RapidMiner, SPSS Modeler, and SAS Enterprise miner to identify and explore additional sentiments and perceptions inherent in the data collected. Additionally, Latent Dirichlet Allocation will be conducted on the transcript data to identify topics and categories that can be used in additional studies.

Conclusion

Military veterans display a greater tendency to develop addictive behavior regarding information-seeking behavior because of their PTSD. Compared to the other members of the study without a PTSD diagnosis, the military veteran population with PTSD exhibited more signs and symptoms of addictive behavior in regard to their information-seeking habits and decision-making processes. Information-over-searching and information avoidance are the two primary areas where addiction traits are most prominent, but the comorbidity of PTSD and addiction in this population warrants additional study, using more advanced methods of analysis so that the results can be more easily interpreted and acted upon.

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