

Self-Esteem and Stress Level among Traumatic Brain Injured Adults with Mild, Moderate and Severe Injuries attending a Day Program Rehabilitation Facility

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Abstract—The purpose of the study was to determine if, among 32 brain injured adults in community rehabilitation programs, there is a statistically significant relationship between the degree of severity of brain injury and these adults' level of self-esteem and stress. The researcher hypothesized there would be a statistically significant difference and a statistically significant relationship in self-esteem and stress levels among and TBI adults. A Pearson product moment correlational analysis was implemented and results found a statistically significant relationship between self-esteem and stress levels. Future recommendations were suggested upon completion of research.

Keywords—anxiety, community recovery center, head-trauma persons, self-concept

I. INTRODUCTION

TRAUMATIC brain injury, also known as acquired brain injury or simple head injury is a major health problem that is affecting the lives of individuals both in the United States of America and globally [9]. In addition, traumatic brain injury is a leading cause of both deaths and disabilities among millions of people worldwide [7]. Annually in the United States, \$48.3 billion is spent on survivors (\$31.7 billion) and those who succumb (\$16.6 billion) from traumatic brain injuries. When one receives sudden trauma to the head by impact, internal damage or loss of oxygen, the individual endures either focal or diffuse damage to the brain, which results in a traumatic head injury [6], [10]. The two types of brain injuries that a person can sustain are a closed head injury and a penetrating head injury. The method for acquiring a closed head injury is when the head of a person is suddenly struck by an object violently but does not break through the skull. Additionally, a penetrating head injury occurs when the skull is forcefully penetrated by an object and enters the brain tissue of an individual. Therefore, after a person sustains and survives a traumatic brain injury, one often faces cognitive, behavioral and communicative disabilities, which impact both one's self-esteem and stress level.

Globally, traumatic brain injury is a silent epidemic that affects the lives of myriad individuals annually. Latest data indicate that traumatic brain injury affects the lives of 1.5 million individuals in the United States annually [9]. Among the 1.5 million people that sustain head injuries, 50,000 people die as a result of traumatic brain injury. Additionally, 230,000 traumatic brain injured victims who survive are typically hospitalized. Furthermore, the estimated 80,000 to 90,000 individuals who sustain brain trauma usually result in some form of long-term disability [9]. Head injuries can occur at any stage in an individual's life. Those with the highest risk of sustaining a traumatic brain injury are children five years and younger, adolescents and young adults ranging from ages 15 to 24, as well as the senior population [10]. One can acquire a traumatic brain injury many different ways. These include: motor vehicle accidents, strokes, tumors and physical assaults.

After an individual sustains a traumatic brain injury their life is typically never the same. For example, one's vocational abilities, social interpersonal skills, physical strength and appearance, cognitive mental state, and his/her self-esteem and stress levels are some areas that may be affected as a consequence of traumatic brain injury [1]. Reference [2] investigated the relationship between life satisfaction and community based social integration among traumatic brain injured adults in a rehabilitation setting and found there is a significant relationship between both variables. Likewise, reference [15] concluded from their research that high levels of depression among traumatic brain injured adults reflected lower statuses of hope which impact both one's life satisfaction and work productivity outcome.

There is a paucity of empirical data on the self-esteem and stress levels among traumatic brain injured adults based on their severity level. Therefore, I wanted to determine if there is a statistically significant difference in self-esteem and stress levels among traumatic brain injured adults based on their severity level. Similarly, I wanted to investigate if there is a statistically significant relationship between self-esteem and stress levels in this population in community rehabilitation programs. I hypothesized that 1. There is a statistically significant difference in self-esteem and stress levels among traumatic brain injured adults in community rehabilitation programs based on severity (i.e., mild, moderate, and severe). 2. There is a statistically significant relationship between self-esteem and the stress level among traumatic brain injured adults in community rehabilitation programs based on severity.

II. METHOD

A. Participants

A convenient non-random sample of thirty-two ($n = 32$) traumatic brain injured adults (male and female) ranging from 18 to 73 years of age was obtained to participate in the study. Each individual had a mild, moderate or severe traumatic brain injury, which was determined from one's Glasgow Coma Scale level and/or their Neuropsychological evaluation. Each participant attended one of two community day program rehabilitation sites for traumatic brain injured adults in the Washington DC metropolitan area. The criteria for the participants included: 1. Must be a person with a traumatic brain injury, 2. Must be 18 years or older, and 3. Must be currently attending a day program rehabilitation facility. The participants included 71.9% male ($n = 23$) and 28.1% female ($n = 9$). Thirty-two individuals from ethnic diverse backgrounds of African American (31.3%), Caucasian (65.6%) and Latino (3.1%) participated in the study. Among the 32 individuals participating, eight had a mild head injury, 11 had a moderate brain injury and 13 had a severe traumatic brain injury. Additionally, the majority of participants, 34.4% ($n = 11$), were between the ages of 26-33 years-old, 12.5% ($n = 4$) were between the ages of 18 and 25, 6.3% ($n = 2$) were between the ages of 34 and 41, 28.1% ($n = 9$) were between 42 and 49 years-old, 12.5% ($n = 4$) were between 50 and 57 years-old, 3.1% ($n = 1$) were in the age range between 58-65 and 66-73 years-old respectively. Moreover, 46.9% ($n = 15$) of the participants were 10+ years post injury, 6.3% ($n = 2$) were one to two years post injury, 12.5% ($n = 4$) were three to five years post injury, 21.9% ($n = 7$) were six to 10 years post injury and 12.5% ($n = 4$) of participants were not cognizant when they sustained their injury.

B. Materials

Self-Esteem. The author used the Rosenberg Self-Esteem Scale to measure the sample's self-esteem [14]. The Rosenberg Self-Esteem Scale, developed by Morris Rosenberg, is a self-report instrument that measures and determines the attitudes toward oneself and how one views him/herself in relation to peers [14]. The assessment consists of 10 statements and is measured on a 4-point Likert scale [14]. Reference [16] indicated that the Rosenberg Self-Esteem Scale has well established internal consistency reliability (.90) and has acceptable validity (.6119).

Stress. The author used the Perceived Stress Scale, developed by Sheldon Cohen, to measure the participants' stress levels [11]. The Perceived Stress Scale consists of 10 statements measured on a 5-point Likert scale. Reference [3] stated that this instrument has good internal reliability and adequate validity.

C. Procedure

The author contacted the director of the two-day program rehabilitation sites to obtain permission to conduct the research study at both facilities.

Next, after receiving approval from the president of the agencies and from a nearby university's institutional review board (IRB), the author proceeded with the study. After one met eligibility to participate in the research study and signed informed consent forms, the author administered a one-page demographic form, and two self-report questionnaires: the Rosenberg Self-Esteem Scale [14] and the Perceived Stress Scale [11] to each participant to complete. Subsequently, the author hand-scored each instrument following guidelines specified in each of the instruction manuals. Further, data were coded numerically using the SPSS (Statistical Package of Social Sciences) 17.0 database for both instruments and reported in aggregate form in order to preserve the participants' confidentiality.

III. RESULTS

The author implemented two one-way ANOVAs (analysis of variance) in order to determine if there were statistical differences in self-esteem and stress among the three groups. The author found there was not a statistically significance difference in self-esteem among traumatic brain injured (i.e., mild, moderate, and severe) adults in community rehabilitation programs ($F(2, 29) = .439, p > .05$). In addition, although approaching significance ($p = .071$), there was not a statistically significant difference in stress levels among traumatic brain injured (i.e., mild, moderate, and severe) adults in community rehabilitation programs ($F(2, 29) = .810, p > .05$). Since no statistically significant differences were observed, a Post-hoc test was not performed (Post-hoc Tests, 2004-2010 [13]).

In order to determine if there was a correlation between self-esteem and stress levels among mild, moderate and severe traumatic brain injured adults, the author used a Pearson Product Moment Correlational Analysis. Results revealed that there is a statistically significant correlation between stress and self-esteem among all traumatic brain injured participants ($r = -.537, p = .002$). Among individuals with severe traumatic brain injuries, findings indicated that there is not a statistically significant relationship between self-esteem and stress levels ($r = -.516; p = .071$). Similarly, there was no statistically significant relationship between self-esteem and stress levels among those participants with mild head injuries ($r = -.544; p = .129$). However, participants with moderate traumatic brain injury exhibited a statistically significant relationship between self-esteem and stress levels ($r = -.723; p = .012$).

IV. DISCUSSION

Previously reviewed literature supports the notion that there is a correlation between a traumatic brain injured adult's level of self-esteem and stress. Reference [4] found those traumatic brain injured persons with both more intact cognitive abilities and awareness of one's cognitive deficits reported lower self-esteem levels.

In addition, reference [4] indicated that the participants who were more cognitively damaged and less aware of their deficits reported higher levels of self-esteem. Furthermore, reference [5] found higher levels of anxiety were associated with traumatic brain injured individuals who typically worried, while those with positive thinking exhibited lower stress levels. Moreover, those individuals with traumatic brain injuries who participate in a supportive services intervention exhibit higher self-esteem levels [10]. Similar to the conclusion of the findings of reference [12], there was an improvement in one's functional outcome of traumatic brain injured individuals who receive early intensive rehabilitation treatment. As a result, a common theme exemplified throughout the literature is the impact head trauma has on one's level of stress. More specifically, according to empirical data, if an individual demonstrates a high level of stress, this usually results in lower self-esteem levels. Given the short- and long-term consequences of traumatic brain injury, the data from my study solidifies the importance of investigating self-esteem and stress levels of traumatic brain injured adults with mild, moderate and severe injuries attending a day program rehabilitation facility.

A. Recommendations and Limitations for Future Research

Based on this study's limitations (small sample size, few sample sites, self reporting instruments), the author proposes the following suggestions: First, a larger sample size of traumatic brain injured adults is recommended in increasing the power of the statistical tests utilized for future research. Second, by conducting research among additional facilities may produce an outcome with more generalized results to represent the population. Third, due to the possibility of the participants not responding to the inventory questions on the self-reporting instruments truthfully, the author recommends future researchers interview the subjects' to gain detailed, realistic responses true to each participant.

Additionally, a person with a traumatic brain injury can experience shifts in one's self-esteem and stress levels sporadically. Therefore, ideally, it is essential for professionals to educate themselves on traumatic brain injury prior and while working with those persons with acquired head injuries. This can be accomplished by professionals attending workshops, seminars, networking and continuing to conduct empirical studies germane to those with traumatic brain injury. Mental health professionals should exhibit patience, demonstrate a sense of humor and model a greater awareness when working with the traumatic brain injured population.

V. CONCLUSION

Depending on the severity of the brain injury and the method that the victim sustained the trauma, the adult may respond positively or negatively to their acquired disability. Since every brain injured being responds to the disability differently, one may become inpatient after remembering what their life was like before their trauma. Therefore, when the individual realizes he or she can no longer regain the life one once had, one's self-esteem and/or stress level can be negatively impacted.

In contrast, others whom view their traumatic brain injury as a positive means to change their life, may appear to be hopeful and determined to make the best out of their unfortunate disability, which may result in a more positive self-esteem and a lower stress level. In either case mentioned, a traumatic brain injury affects the individual's self-esteem and stress level regardless of how one copes with their traumatic head injury; therefore, mental health professionals must be sensitive to each traumatic brain injured adult one serves.

In closing, although some of the results of this study did not support previous research findings linking self-esteem and stress among traumatic brain injured adults with mild, moderate and severe injuries attending a day program community rehabilitation facility, it is imperative to be mindful each brain injury is case specific. Accordingly, it is of paramount importance that we continue to educate mental health professionals, victims and their families about the seriousness of traumatic brain injury. The professional and personal consequences of individuals who have sustained traumatic brain injury can be far reaching; therefore, we must take precautions to promote and safeguard an environment more conducive to their survival and success.

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