

Outcome of Early Rehabilitation Services on the Development and Management of PTSD Among Soldiers in the Headquarters 82 Division Nigerian Army Enugu

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Abstract

Background: Post-Traumatic Stress Disorder (PTSD) is a significant and often under-managed mental health concern among military personnel, particularly those exposed to high-risk operations.

Objective: This study investigated the outcome of early rehabilitation services on the development and management of PTSD among soldiers in Headquarters 82 Division Nigerian Army, Enugu.

Methods: “A cross-sectional study design was employed, with a sample of 244 soldiers selected using a multi-stage sampling technique from a population of 500. Data were collected using a standardized questionnaire that included the Post-traumatic Stress Disorder Checklist-Military Version (PCL-M) and the Combat Exposure Scale (CES). The instrument's reliability was confirmed with a test-retest coefficient of 0.82. Data were analyzed using mean and standard deviation to answer the research question, while simple regression analysis was used to test the hypotheses at a 0.05 level of significance.”

Results: The findings revealed that early rehabilitation services had a generally positive outcome, with a high average mean score of 3.44 (SD=0.37) indicating perceived improvement in psychological well-being. Soldiers reported feeling much better (Mean=3.70), feeling loved again (Mean=3.98), and experiencing reduced worry and depression (Mean=3.78). The regression analysis showed a significant positive relationship between the development of PTSD and the length of time spent in active service ($R^2=0.578$, $p<0.05$) and duration of combat exposure ($R^2=0.720$, $p<0.05$). Furthermore, a significant relationship was found between the outcome of early rehabilitation services and the development and management of PTSD ($R^2=0.423$, $p<0.05$), leading to the rejection of the null hypothesis.

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Conclusion: The study concludes that early rehabilitation services have a significant positive impact on managing PTSD among soldiers, although the length of service and combat exposure are key determinants in its development. It recommends the strengthening and personalization of early mental health interventions within the Nigerian military to enhance recovery and ensure operational effectiveness.

Keywords: Development, Management, Psychological trauma, Rehabilitation, Soldiers

INTRODUCTION

Post-Traumatic Stress Disorder (PTSD) is an escalating concern within military populations globally, and members of the Nigerian Army are no exception. The military profession is inherently hazardous, consistently exposing personnel to traumatic incidents such as active combat, the loss of fellow soldiers, life-endangering missions, and chronic operational strain. These experiences frequently lead to enduring psychological difficulties.¹ Within Nigeria, soldiers stationed at Headquarters 82 Division, Enugu, are regularly deployed to high-stakes operations, including counter-insurgency efforts, internal security assignments, and peacekeeping missions—all of which heighten their susceptibility to developing PTSD.²

Despite increasing international recognition of mental health issues, PTSD remains frequently overlooked and poorly addressed within the Nigerian military system. As a result, numerous affected soldiers silently cope with their symptoms, a situation that can precipitate long-term mental health decline, reduced job performance, troubled interpersonal relationships, substance misuse, and in severe cases, suicidal thoughts.^{3,4} Moreover, there is a notable absence of empirically based, locally focused research exploring the factors associated with PTSD among Nigerian soldiers, specifically those at Headquarters 82 Division. This deficiency in research and the consequent limited availability of care obstruct the formulation of evidence-based approaches essential for crafting effective prevention and treatment strategies.^{2,4} Ultimately, the lack of contextually relevant data and intervention frameworks poses a threat to the operational effectiveness, development, and overall welfare of the Nigerian military workforce. In response, this study seeks to investigate the impact of early rehabilitation services on the progression and management of PTSD among soldiers at Headquarters 82 Division Nigerian Army, Enugu.

Objectives of the Study is to ascertain the outcome of early rehabilitation services on the development and management of PTSD among soldiers in the Headquarters 82 Division Nigerian Army Enugu.

Research Questions: What is the outcome of early rehabilitation services on the development and management of PTSD among soldiers in the Headquarters 82 Division Nigerian Army Enugu?

Hypothesis: There is no significant relationship between outcome of early rehabilitation services on development and management of PTSD.

Concept of PTSD

Post-traumatic Stress Disorder (PTSD) is a psychiatric diagnosis that may arise after an individual experiences a life-threatening or profoundly distressing event—such as sexual violence, military combat, motor vehicle collisions, childhood maltreatment, domestic abuse, or other serious threats to personal safety.⁵ Its clinical picture includes recurrent, involuntary intrusive memories; disturbing dreams; or intense psychological and physiological reactions to trauma reminders; purposeful avoidance of such reminders; lasting negative alterations in mood and cognition; and exaggerated startle responses. For a diagnosis to be made, these manifestations must persist beyond one month following the traumatic event.⁵ In young children, distress may not be directly expressed but can emerge through repetitive play that reenacts traumatic themes. Individuals with PTSD face an elevated risk of self-harm and suicidal behavior.

“The majority of people who endure trauma do not subsequently develop PTSD.⁶ However, those exposed to interpersonal violence for instance, sexual assault, abduction, stalking, physical abuse by a partner, or childhood maltreatment are at greater risk than those who experience non-assaultive events such as accidents or natural disasters. Prolonged or repeated trauma, including situations like captivity, internment in concentration camps, or sustained domestic violence, can lead to complex post-

traumatic stress disorder (C-PTSD). Although related to PTSD, C-PTSD is differentiated by its profound impact on emotional regulation and self-concept.⁷”

Preventive strategies may be beneficial when aimed at individuals displaying early symptoms, but they are not supported when applied universally to all trauma-exposed persons irrespective of symptom presentation. Psychotherapy and medication constitute the primary approaches to PTSD treatment. First-line pharmacotherapy consists of SSRIs or SNRIs, which offer modest benefits for roughly half of patients.⁸ In general, medication produces less robust results than psychotherapy. Whether combining medication with counseling yields additional advantages over either modality alone remains uncertain. Evidence does not support the use of other drug classes, and benzodiazepines in particular have been linked to worse outcomes.⁹

In the United States, approximately 3.5% of adults experience PTSD in any given year, with a lifetime prevalence of 9%.¹⁰ Annual rates elsewhere globally typically range from 0.5% to 1%, though they can be higher in regions experiencing armed conflict. The disorder is more prevalent among women than men.¹¹

Descriptions of symptoms resembling trauma-induced mental disorders date back to ancient Greece. Indications of post-traumatic illness appear in records from the 17th and 18th centuries, including the diary of Samuel Pepys, which recounts distressing intrusive symptoms following the Great Fire of London in 1666. During the world wars, the condition was known by various terms such as “shell shock,” “war nerves,” neurasthenia, and “combat neurosis”.¹² The term post-traumatic stress disorder came into use during the 1970s, influenced significantly by diagnoses among U.S. military veterans of the Vietnam War. It was formally recognized by the American Psychiatric Association in 1980 with the publication of the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III).¹³

Associated Medical Conditions

Trauma survivors often present with co-occurring depression, anxiety disorders, and mood disturbances alongside PTSD. More than half of individuals with PTSD meet criteria for a concurrent anxiety, mood, or substance use disorder. Substance use disorders, especially alcohol-related, frequently accompany PTSD.¹⁴ When substance use disorders and PTSD co-occur, recovery may become more

complicated or symptoms may worsen; treating both conditions together can lead to improved mental health outcomes and reduced anxiety.

“PTSD is strongly associated with tinnitus and may play a role in its development. Among children and adolescents, there is a notable link between difficulties with emotional regulation such as mood swings, angry outbursts, and temper tantrums and post-traumatic stress symptoms, irrespective of age, gender, or trauma type. Moral injury, defined by shame or guilt following a violation of moral values, is a related yet distinct concept; moral injury is predominantly associated with shame and guilt, whereas PTSD is defined by anxiety and fear.”

A population-based study of Vietnam War veterans found that PTSD and exposure to high levels of combat stress were associated with a twofold increase in mortality, primarily due to ischemic heart disease and respiratory tract cancers, including lung cancer.

Management

Research reviews indicate that combining psychological interventions with pharmacotherapy yields greater effectiveness than psychological treatment alone.¹⁵

Counseling

“The most strongly supported modalities include behavioral and cognitive-behavioral approaches such as prolonged exposure, cognitive processing therapy, and eye movement desensitization and reprocessing (EMDR). Evidence also supports Brief Eclectic Psychotherapy (BEP), Narrative Exposure Therapy (NET), and written exposure therapy.”

A 2019 Cochrane review assessed couple- and family-based therapies in comparison to no treatment, individual therapy, and group therapy for PTSD. The limited number of studies on couples’ therapies precluded definitive conclusions, though preliminary randomized controlled trials suggested they may be effective in reducing PTSD symptoms. A meta-analytic comparison of EMDR and Cognitive Behavioral Therapy (CBT) found both similarly effective for PTSD, though the contribution of eye movements in EMDR remains unclear. A meta-analysis in children and adolescents similarly showed EMDR and CBT to be comparably effective. Children with PTSD are more likely to receive treatment in school settings due to convenience and accessibility than at free clinics.¹⁶

Cognitive Behavioral Therapy

Cognitive behavioral therapy aims to alter patterns of thinking and behavior that contribute to distressing emotions. An evidence-based systematic review in 2018 found that exposure-based CBT reduces PTSD and depression symptoms and promotes loss of PTSD diagnosis. A standard treatment for PTSD is cognitive behavioral therapy, which is recommended by the Department of Defense, US.

In CBT, individuals learn to identify trauma-related distressing thoughts and replace them with less distressing alternatives. The goal is to understand how specific interpretations of events contribute to PTSD-related distress. An online version of CBT for mild-to-moderate PTSD was found to be as effective and less costly than face-to-face delivery. A 2021 Cochrane review reported similar beneficial effects for internet-based CBT compared to in-person therapy, though the evidence quality was low due to the limited number of trials.

Exposure therapy, which is a type of cognitive behavioral therapy, involves confronting distressing trauma-related memories and reminders in order to encourage habituation and emotional processing. A variety of exposure therapy programs include both in vivo and imaginal confrontations with traumatic memories; this method has proven to be effective in treating PTSD.

Some organizations advocate for exposure-based approaches. The U.S. Department of Veterans Affairs actively trains mental health clinicians in prolonged exposure therapy and cognitive processing therapy to better serve veterans with PTSD. Recent research on third-wave contextual behavior therapies suggests outcomes comparable to more established therapies. Many of these methods incorporate significant exposure elements and have shown effectiveness in treating core PTSD symptoms and co-occurring depression.

Eye Movement Desensitization and Reprocessing

Eye Movement Desensitization and Reprocessing (EMDR) is a psychotherapeutic approach developed by Francine Shapiro, who observed that her own disturbing thoughts became less distressing when she controlled her eye movements while recalling them.¹⁷

In 2002, Shapiro and Maxfield proposed adaptive information processing as a theoretical explanation, suggesting that eye movements facilitate emotional processing of memories, allowing individuals to integrate more adaptive

information.^{18,19} During EMDR, the therapist initiates voluntary rapid eye movements—or uses hand-tapping or tones—while the individual focuses on memories, feelings, or thoughts about a specific trauma.²⁰ EMDR shares elements with CBT, including exposure (by revisiting the traumatic experience), cognitive processing, and self-monitoring, though exposure in EMDR occurs through silently thinking about the experience rather than verbally describing it.

“Several small, controlled trials of four to eight weeks of EMDR have been conducted in adults, children, and adolescents. A 2018 systematic review update found moderate evidence supporting EMDR’s effectiveness in reducing PTSD symptoms, achieving loss of diagnosis, and decreasing depressive symptoms. Short-term outcomes showed that one in two adults no longer met PTSD criteria, though findings should be interpreted cautiously due to small sample sizes. Evidence was insufficient to determine whether EMDR can eliminate PTSD in adults.”

“A recent meta-analysis of randomized controlled trials in children and adolescents, using methods to reduce bias from missing information, found EMDR at least as effective as CBT and superior to waitlist or placebo conditions. Some evidence suggested EMDR might prevent depression. No studies compared EMDR to other psychological treatments or medication, and adverse effects were largely unexamined. Benefits were more pronounced in women with a history of sexual assault than in those with other trauma types. Limited evidence indicates EMDR may reduce re-experiencing symptoms in youth, but its effects on other PTSD symptoms, anxiety, and depression remain unproven.”

The specific role of eye movements in EMDR may not be essential to its efficacy. Without large, high-quality randomized trials comparing EMDR with and without eye movements, the debate over its mechanism is likely to continue. A 2013 meta-analysis noted that individuals receiving EMDR showed greater symptom improvement than those receiving therapy without eye movements, and laboratory studies indicated that recalling distressing memories while engaging in eye movement tasks reduced the vividness and emotional intensity of those memories. Although EMDR originated in adult PTSD treatment and is increasingly used with children, further research is needed to understand its long-term outcomes. For children, EMDR involves reimagining the trauma while shifting gaze between two points, continuing until the memory can be recalled without fear or hyperarousal. This approach

aims to shift negative memory storage toward a more positive association by linking triggering stimuli with more pleasant thoughts. Proponents suggest EMDR may achieve symptom improvement in fewer sessions than CBT, though more research on long-term benefits is needed.

Interpersonal Psychotherapy

Other approaches, particularly those that bolster social support, may also be important. An open trial of interpersonal psychotherapy reported high remission rates from PTSD symptoms without the use of exposure techniques.

Medication

Although many medications lack sufficient supporting evidence, four sertraline, fluoxetine, paroxetine, and venlafaxine have shown modest benefit over placebo. Residual symptoms after treatment are common with most pharmacotherapies.

Antidepressants

“Selective Serotonin Reuptake Inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) may offer some benefit for PTSD symptoms. Tricyclic antidepressants are similarly effective but less well tolerated. Evidence supports modest improvement with sertraline, fluoxetine, paroxetine, and venlafaxine, making these four first-line medications for PTSD²¹. Paroxetine and sertraline are FDA-approved for PTSD treatment.”

Benzodiazepines

The use of benzodiazepines in PTSD is discouraged due to limited evidence supporting their efficacy and the potential for symptom exacerbation. Some authors consider them contraindicated in acute stress because they may promote dissociative reactions. Although they are occasionally used cautiously for short-term relief of anxiety or insomnia, consistent evidence does not support their role in preventing PTSD; moreover, their use may increase the likelihood of developing the disorder by a factor of two to five. Benzodiazepines should be avoided in the immediate aftermath of trauma, as they may worsen PTSD-related symptoms.

Benzodiazepines may diminish the benefits of psychotherapeutic interventions and can contribute to both the onset and persistence of PTSD. Among individuals with an established diagnosis, they may aggravate and prolong the

condition by interfering with psychotherapy outcomes and increasing aggression, depression (including suicidal ideation), and substance misuse. Additional concerns include the risks of dependence, tolerance, and withdrawal; individuals with PTSD—even those without a prior history of substance use disorders are at heightened risk for benzodiazepine misuse.

Given the availability of more effective treatment alternatives with a more favorable risk profile, benzodiazepines should be considered relatively contraindicated unless all other options have been exhausted. Their use also carries the risk of disinhibition, which has been linked to suicidality, aggression, and criminal behavior, and may delay or obstruct the implementation of more definitive PTSD treatments.

Military Programs

“Numerous veterans of the conflicts in Iraq and Afghanistan experience significant physical, emotional, and relational difficulties. In response, the United States Marine Corps has introduced programs designed to assist with reintegration into civilian life, particularly in strengthening relationships with spouses and loved ones by promoting communication and mutual understanding. The Walter Reed Army Institute of Research (WRAIR) developed the Battlemind initiative to support service members in preventing or reducing PTSD and associated challenges. The Wounded Warrior Project, in collaboration with the U.S. Department of Veterans Affairs, established Warrior Care Network, a nationwide system of PTSD treatment centers.”

THEORETICAL REVIEW

This study drew on theoretical frameworks centered on emotional processing and stress response.

Emotional Processing Theory

Emotional Processing Theory (EPT), initially proposed by Rachman (1980, 2001)²², offers a conceptual framework for understanding how individuals process and recover from traumatic events. A central element of EPT is the fear structure, which consists of representations of stimuli (specific aspects of the event), responses (emotional and behavioral reactions during the trauma), and meanings (the individual’s interpretation of the trauma in relation to themselves or their environment). According to the theory,

traumatic experiences can give rise to maladaptive fear structures within memory, resulting in persistent psychological distress when these structures remain unprocessed.

EPT posits that successful emotional processing occurs when an individual activates the trauma-related fear structure and incorporates new, non-threatening information that helps modify or dismantle the maladaptive responses linked to the memory. Avoidance behaviors prevent activation of this structure, thereby obstructing emotional processing and perpetuating PTSD symptoms.²³

Recent scholarship has strengthened empirical support for EPT, particularly within military contexts. Brewin and Holmes (2023)²⁴ observe that repeated, prolonged combat-related trauma frequently produces complex and deeply ingrained fear structures, making emotional processing more difficult yet simultaneously more essential. Similarly, Minnen et al. (2022)²⁵ found that veterans who underwent structured exposure therapy grounded in EPT principles experienced substantially greater reductions in PTSD symptoms compared to those receiving non-directive supportive counseling. This finding underscores the necessity of deliberate therapeutic engagement with traumatic memories to facilitate emotional resolution and psychological recovery.

Contemporary neuroscience also aligns with EPT's emphasis on activating and modifying fear structures. Neuroimaging research indicates that effective emotional processing in PTSD therapy correlates with reduced amygdala activation (linked to fear and emotional reactivity) and increased prefrontal cortex activity (associated with emotion regulation and cognitive control).²⁶ These observations support EPT's proposition that cognitive and emotional restructuring of trauma memories is fundamental to recovery.

EPT offers a compelling framework for conceptualizing trauma recovery through the confrontation and reorganization of maladaptive fear structures. The theory has demonstrated sustained relevance, evolving alongside new research and maintaining its applicability, particularly in understanding PTSD among high-risk groups such as military personnel.

Application of the Theory to the Study

Applying EPT to identify determinants of PTSD reveals a complex interplay among emotional responses, cognitive processing, and behavioral outcomes following trauma. EPT proposes that PTSD arises from maladaptive emotional processing,

in which individuals engage in avoidance behaviors that hinder the integration of traumatic memories, leading to persistent symptoms such as hyperarousal and intrusive thoughts.²⁷⁻²⁹ Research indicates that the content of trauma narratives significantly influences PTSD outcomes. Specifically, narratives incorporating positive emotional expressions are associated with lower levels of psychological distress, whereas those dominated by negative emotions correlate with heightened PTSD symptoms. This suggests that the way individuals articulate their traumatic experiences particularly the emotional tone plays a critical role in emotional processing and subsequent recovery. Furthermore, cognitive distortions, such as viewing the world as entirely dangerous, exacerbate PTSD symptoms by reinforcing avoidance strategies that prevent effective emotional processing.^{22,27}

Emotion regulation also plays a crucial role in PTSD. Individuals with the condition often experience difficulty managing their emotions, which can lead to rumination and maladaptive coping strategies such as avoidance and suppression. These approaches not only sustain but may also intensify PTSD symptoms by preventing confrontation and processing of the trauma. For instance, studies have shown that difficulties in emotion regulation mediate the relationship between trauma exposure and PTSD severity, indicating that enhancing emotion regulation skills may be a vital component of effective therapeutic interventions.

The neurobiological underpinnings of PTSD further clarify the emotional processing deficits observed in affected individuals. Alterations in brain regions associated with emotional and cognitive processing, such as the amygdala and prefrontal cortex, have been documented in PTSD patients, suggesting a neural basis for the emotional dysregulation characteristic of the disorder. These neural changes can lead to heightened sensitivity to emotional stimuli and impaired cognitive control, both critical factors in the context of trauma.²⁹

Stress Response Theory

Stress response theory, originally formulated by Horowitz in 1976, centers on how traumatic experiences disrupt individuals' fundamental assumptions about the world and the subsequent efforts required to assimilate new trauma-related information.³⁰ According to the theory, traumatic events can shatter core beliefs, giving rise to post-trauma distress. People with PTSD often display altered physiological patterns, such as heightened sympathetic nervous system activity and

diminished baroreflex sensitivity.^{31,32} These physiological changes contribute to the elevated cardiovascular risk observed in this population. Additionally, research has linked PTSD to higher resting blood pressure, further aggravating autonomic dysregulation.³²

The conservation of resources theory has also been used to explain the emergence of PTSD symptoms, emphasizing the role of chronic and traumatic stress in the disorder's onset.³³ This framework underscores how access to resources influences the ability to cope with stress and trauma, helping to clarify why some individuals develop PTSD after exposure while others do not. In addition, studies have examined the interplay between social support and the oxytocin system in traumatic stress, suggesting that oxytocin may mitigate psychophysiological stress responses in veterans with PTSD³⁴, thereby pointing to a possible intervention strategy for managing acute symptoms.

Application of the Theory to the Study

Applying stress response theory to identify contributors to PTSD reveals a complex interplay of psychological, social, and environmental elements. The theory posits that reactions to traumatic events are shaped by cognitive appraisal and coping mechanisms, which can significantly influence the subsequent development of PTSD. This perspective is particularly useful when examining the diverse factors associated with PTSD across different populations.

One significant factor is coping self-efficacy and hope, which have been identified as protective elements. Azeem and Kiran (2022)³⁵ emphasize that individuals with stronger coping self-efficacy and higher levels of hope tend to maintain psychological stability despite trauma exposure, suggesting that these qualities can mitigate adverse effects and foster post-traumatic growth. This aligns with findings from Wang et al. (2022)³³, who identified cognitive processing styles such as rumination and avoidance as critical in the development of PTSD symptoms among earthquake survivors. Ineffective coping strategies can amplify stress responses, leading to more severe PTSD symptoms.

Social support is another crucial factor influencing PTSD outcomes. Azeem and Kiran (2022)³⁵ note that social support can significantly reduce stress and depression, serving as a protective buffer against PTSD. This is reinforced by the meta-analysis conducted by Trickey et al. (2018)³⁶, which identified social support as a key risk factor for PTSD in children and adolescents. The presence

of a supportive network can facilitate adaptive coping, thereby reducing the likelihood of PTSD following trauma.

Moreover, the context of trauma plays a vital role in the stress response. For instance, the experiences of war-affected populations, as discussed by Azeem and Kiran (2022)³⁵, reveal that exposure to violence and loss can lead to substantial psychological distress, including PTSD. The cumulative burden of pre-migration and post-migration stressors further complicates the mental health landscape for refugees and internally displaced persons, as noted by Trickey et al. (2018).³⁶ These studies underscore the importance of considering both individual and contextual factors when assessing PTSD risk. Additionally, the psychological impact of parenting a child with a chronic illness has been explored by Fonzo et al. (2018)²⁹, who found that parents often experience ongoing traumatic stress due to the persistent nature of their child's condition. This highlights how prolonged exposure to stressors can result in cumulative trauma, increasing the risk of PTSD.

EMPIRICAL REVIEW

Gyang et al. (2023)³⁷ conducted a “study aimed at estimating the prevalence of PTSD and the effect of early rehabilitation services, as well as examining its manifestation across the three symptom clusters— intrusion, avoidance, and hypervigilance—in relation to demographic characteristics such as age, gender, marital status, and educational level following clashes between Fulani herders and the Berom ethnic group in Jos, north-central Nigeria. A cross-sectional design was used to systematically select 248 adult internally displaced persons (IDPs) aged 18 years and above. The DSM-IV PTSD-8 inventory structured scale questionnaire was employed to screen for PTSD symptoms, and cross-tabulation analysis was performed between PTSD and demographic variables.” The results showed a PTSD prevalence of 85.5% among participants. Significant relationships were found between gender and intrusion, avoidance, and hypervigilance. Age was also significantly associated with intrusion and avoidance but not with hypervigilance. Marital status showed significant relationships with intrusion and avoidance, and educational level demonstrated significant relationships with intrusion, avoidance, and hypervigilance. The study concluded that community-based mental health care services and psychological support should be provided to IDPs to alleviate symptoms and prevent further complications associated with PTSD.

Bhagawati (2018)³⁸ investigated the “prevalence of PTSD and the use of coping strategies among adult survivors of an earthquake. A cross-sectional descriptive study was conducted with 291 adult survivors ten months after the 2015 Nepal earthquake. The study setting was Nuwakot district, using multistage sampling (cluster sampling and systematic random sampling). The PTSD Checklist-5 was used to measure PTSD, and an adapted and modified Brief COPE scale assessed coping strategies. Data were analyzed using descriptive and inferential statistics (independent t-test and one-way ANOVA) at a 5% significance level. Findings revealed that PTSD was prevalent among 24.10% of adult survivors, with intrusion symptoms being the most commonly reported. PTSD was significantly associated with age, sex, education, and injury to self. Elderly individuals, females, illiterates, and those injured during the earthquake were at greater risk.” The most frequently used coping strategy was active coping. Survivors without PTSD scored higher on active coping and self-distraction, whereas those with PTSD predominantly used passive coping, religious coping, and substance use coping. The study concluded that earthquakes have a substantial impact on survivors’ mental health, with a high prevalence of PTSD even ten months after the disaster. Maladaptive coping strategies further increase the likelihood of PTSD. Effective screening and awareness programs promoting positive coping strategies among vulnerable groups should be reinforced to prevent psychiatric morbidity among earthquake survivors.

Research Design

The research design employed in this study was a cross-sectional design. A cross-sectional approach enables the researcher to analyze data from a population or a representative subset at a single point in time. This design is commonly used across various fields, including social sciences, epidemiology, psychology, and public health, to explore the prevalence of outcomes or to examine associations between variables.

Area of the Study

This study was conducted at the Headquarters of the 82 Division Nigerian Army, Enugu. Established in 1975, the division’s headquarters is located in Abakpa, Enugu State, South-East Nigeria. It is a strategic military formation housing personnel from diverse backgrounds and is actively engaged in military operations, internal security, and defense within the South-Eastern and part of the South-South regions of

the country. The Division comprises several specialized units, including the 82 Division Military Hospital, a healthcare facility managed by the military that features modern equipment and skilled staff providing a wide range of healthcare services. The hospital caters to various medical needs, including rehabilitation services for patients recovering from conditions such as PTSD.

Population of the Study

The population of the study comprises all soldiers serving at the Headquarters 82 Division Nigerian Army Enugu. This includes both male and female across various ranks and units. A pilot study revealed that there are 500 soldiers in the unit (Headquarters 82 Division Nigerian Army Enugu Registry). That is 212 males and 88 females.

Sample Size Determination

The sample size for this study was two hundred and forty-four (244) soldiers, consisting of two hundred (200) males and forty-four (44) females. The Taro Yamane sample size formula was applied to the population of 500 to arrive at the sample size of 244.

Sample and Sampling Technique

A multi-stage sampling technique was used to obtain the desired sample of 244 soldiers (200 males and 44 females) from the study population of 500 soldiers (412 males, 88 females).

In the first stage, all military units (companies/platoons) serving as natural clusters were listed. Using Probability Proportional to Size (PPS), a subset of these clusters was selected to ensure that larger units had a higher chance of inclusion, thereby improving representativeness. In the second stage, within each selected cluster, stratified random sampling by gender was conducted. The required number of males and females per cluster was calculated based on the cluster’s gender composition, and soldiers within each gender stratum were randomly selected until the overall quotas of 200 males and 44 females were met.

This approach was justified by its balance of logistical efficiency and statistical representativeness. Sampling clusters first reduced fieldwork costs and complexity, while the gender stratification ensured that the final sample accurately reflected the population’s gender distribution and provided sufficient numbers for subgroup analysis. The use of PPS at the first stage further minimized

sampling bias, making the design both practical and methodologically sound.

Instrument for Data Collection

A standardized Post-traumatic Stress Disorder Checklist-Military Version (PCL-M version) and Combat Exposure Scale (CES) questionnaire were adopted and used to collect data for the study. The instrument was divided into sessions A and B. While section B featured items based on objectives, section A provide demographic data about the respondents. The Four point likert scale was graded as Strongly Agree (AS = 1), Agreed (A = 2), Disagree (D = 3), and strongly disagree (SD = 5).

Validity of the Instrument

Although the instruments were already standardized, the researchers peer reviewed and evaluated the face and content validity.

Reliability of the Instrument

Even though the instruments were already standardized, the researchers still carried out a reliability test on them to ensure that they were culture-fair to the Nigerian environment. The reliability of the research instrument was determined using a test-retest method involving the administration of the instrument to 25 veterans which are not selected for the main study. The

instrument was first administered to the soldiers and re-administered to them after two weeks. Pearson’s Product Moment Correlation coefficient was used to determine the reliability coefficient of 0.82 which was acceptable.

Method of data Collection

The instrument was administered to the respondents by the researchers in a noise free environment and the data was retrieved on the spot and used for the study.

Method of Data Analysis

“The data collected was analyzed using mean (\bar{x}) and standard deviation (SD) to answer the research questions. The criterion mean was used in scoring the instrument at 2.50 which signifies ‘Very Severe’ to the item, as items below 2.50 denoted ‘Severe’. This was gotten by summing up the weighted points and divided by 4, thus: $4+3+2+1/4= 2.50$. The null hypotheses formulated were tested using simple regression statistics at 0.05 level of significance.”

Ethical Consideration

The Ethical Committee of the Headquarters of 82 Division Nigerian Army Enugu granted Permission to the researchers to carry out the study through a letter dated 29 April 2025 with reference number (82 DMSH/G1/300/35).

Table 1. Demographic Data of respondents

Variables	Number	Percentages %
Age		
25-30 years	154	63.4
31-35 years	36	14.6
36- 40 years	30	12.2
40 and above	24	9.8
Gender		
Male	173	70.7
Female	71	29.3
Marital Status		
Single	13	5.2
Married	98	40.2
Divorced	57	23.4
Separated	26	10.8
Widowed	50	20.4

Source: Field Survey, 2025

The above table 1 indicates that 63.4% of the respondents were between 25 – 30 years, 14.6% were between 31 – 35 years, 12.2% were between 36 – 40% while 9.8% were between 40 years and

above. 70.7% were males while 29.3% were females, 5.2% were single, 40.2% were married, 23.4% were divorced, and 10.8% were separated while 20.4% were widowed.

Research Question: What is the outcome of early management of PTSD among soldiers in the rehabilitation services on the development and Headquarters 82 Division Nigerian Army Enugu?

Table 2. Outcome of Early Rehabilitation Services on the Development and Management of PTSD Among Soldiers in the Headquarters 82 Division Nigerian Army Enugu.

S. No.	Items	N	Min.	Max	Mean	Std. Deviation
1	Felt much better after treatment	244	1.00	4.00	3.70	.18912
2	The treatment made me feel loved again	244	1.00	4.00	3.98	.77745
3	Had less worries after the treatment	244	1.00	4.00	3.78	.43124
4	Not feeling depressed again	244	1.00	4.00	3.78	.51212
5	The treatment did not change anything, I still feel the same way	244	1.00	4.00	2.74	.16517
6	Feel worse after the treatment	244	1.00	4.00	2.65	.14114
Average mean and SD					3.44	0.369373

As presented in table 2, the results of the study indicate that early rehabilitation services had a generally favorable impact on the psychological well-being and post-trauma recovery of soldiers at Headquarters 82 Division of the Nigerian Army. The overall mean score for the outcome indicators was 3.44, with a standard deviation of 0.369, reflecting a moderately high level of perceived improvement following rehabilitation. A substantial portion of respondents reported feeling considerably better after treatment, with a high mean of 3.70 and a low standard deviation of 0.18912, suggesting a broadly consistent sense of emotional relief and psychological progress resulting from the intervention. Additionally, many soldiers noted that the treatment helped them feel loved again, which yielded the highest mean of 3.98, though the standard deviation was comparatively wider at 0.77745. This indicates that while most participants experienced emotional support, the degree of that experience varied across individuals. This finding speaks to the emotional reconnection and restorative interpersonal aspects of therapeutic intervention, which are vital in trauma recovery.

The statement "I had less worries after the treatment" recorded a mean of 3.78 with a standard deviation of 0.51212, showing that the majority of respondents experienced a reduction in anxiety and

persistent worry—symptoms central to PTSD. Similarly, a mean of 3.78 was also reported for "I was not feeling depressed again," accompanied by a standard deviation of 0.51212. This finding suggests that early rehabilitation played a significant role in alleviating depressive symptoms, which frequently co-occur with PTSD among individuals affected by trauma.

Mixed responses were observed regarding the perceived effectiveness of treatment, as reflected in the item "The treatment did not change anything, I still feel the same way," which had a lower mean of 2.74 and a small standard deviation of 0.16517. This suggests that a small but noteworthy subset of participants did not perceive meaningful improvement in their condition despite undergoing rehabilitation. Similarly, the item "I feel worse after the treatment" recorded the lowest mean score of 2.65, with a standard deviation of 0.14114, indicating that only a limited number of respondents felt their emotional state had deteriorated following rehabilitation, and their responses were relatively consistent.

Hypothesis: There is no significant Relationship between the development of PTSD among soldiers and the of length time spent in active service in the Headquarters 82 Division Nigerian Army Enugu.

Table 3. Regression Analysis of Development of PTSD among Soldiers and the Length Time Spent in Active Service in the Headquarters 82 Division Nigerian Army Enugu.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.761 ^a	0.578	0.577	4.01870		
ANOVA ^a						
Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	7600.276	1	7600.276	470.606	0.000 ^b
	Residual	5539.446	343	16.150		
	Total	13139.722	344			

Source: Field Survey 2025, Note: β = Standardized Coefficient, significant at 0.05

Table 3 presents the results of the regression analysis examining the relationship between the development of PTSD among soldiers and the duration of active service at Headquarters 82 Division Nigerian Army Enugu. The R-square value was 0.578, indicating that 57.8% of the variance in PTSD development among soldiers can be accounted for by the length of time spent in active service at the 82 Division Hospital Rehabilitation Centre in Enugu. The analysis of variance (ANOVA) for the regression produced an F-value of 470.606 ($p = 0.000$). This demonstrates that the duration of active service significantly influences the development of PTSD among soldiers at Headquarters 82 Division Nigerian Army Enugu. The significance level of 0.000 represents the computed p-value, which was

compared against the conventional threshold of 0.05. Because the p-value is below 0.05, the null hypothesis was rejected. Consequently, the length of active service significantly affects the development of PTSD among soldiers at the 82 Division Hospital Rehabilitation Centre in Enugu. Finally, the regression coefficient indicates a positive relationship between PTSD development and time spent in active service ($\beta = 0.761$, $t = 21.693$, $p < 0.05$). This suggests that an increase in the duration of active service is associated with a 76.1% increase in the development of PTSD among soldiers.

Hypothesis: There is no significant relationship between outcome of early rehabilitation service on development and management of PTSD.

Table 4. Regression Analysis of Relationship Between Outcome of Early Rehabilitation Service on Development and Management of PTSD.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.651 ^a	0.423	0.112	4.85590		
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1377.701	1	1377.701	40.176	0.000 ^b
	Residual	11762.020	343	34.292		
	Total	13139.722	344			

Source: Field Survey 2025, Note: β = Standardized Coefficient, significant at 0.05

The regression analysis examining the relationship between early rehabilitation services and post-traumatic stress disorder (PTSD) outcomes revealed an R-square value of 0.423. This indicates that early intervention among soldier's accounts for 42.3% of the variance observed in both the development and management of PTSD. The accompanying analysis of variance (ANOVA) produced an F-value of 40.176, which was statistically significant ($p = 0.000$). This significance level, when compared against the conventional alpha threshold of 0.05, leads to rejection of the null hypothesis. Consequently, early rehabilitation efforts directed at soldiers within the 82 Division Nigerian Army Enugu exert a substantial influence on PTSD-related outcomes (Table 4).

DISCUSSION OF FINDINGS

The deployment of early rehabilitation services plays a critical role in shaping both the progression and treatment of PTSD among military personnel. Within the specific setting of the 82 Division Hospital Rehabilitation Centre in Enugu, such services address key aspects of the disorder, including symptom intensity, restoration of function,

and overall life quality. Timely rehabilitation efforts have been shown to foster psychological well-being; for instance, Azeem and Kiran³⁵ observed that individuals receiving post-injury rehabilitation experienced better functional status and quality of life, which were associated with reduced PTSD symptoms. This finding is consistent with the work of Gyang et al. and Bhagawati, who argued that initiating treatment early can enhance the cost-effectiveness of care and potentially halt symptom progression, thereby improving long-term psychological outcomes.³⁷

Combining physical rehabilitation with psychological care addresses the multifaceted symptom profile often seen in PTSD. Ni and colleagues noted that such integrated approaches yield superior functional results and fewer complications, which in turn correlate with diminished PTSD symptomatology³⁵. This integrated model is especially pertinent at the 82 Division Hospital, where soldiers frequently present with co-occurring physical injuries that compound psychological distress. The presence of chronic pain a common comorbidity with PTSD further complicates recovery. Bhagawati highlights that a considerable proportion of soldiers experiencing

chronic pain also meet criteria for PTSD, underscoring the necessity of treatment protocols that concurrently manage pain and psychological symptoms.³⁸ This interplay reinforces the value of early rehabilitation strategies that adopt a holistic framework, thereby mitigating persistent challenges faced by wounded service members.

Beyond clinical interventions, vocational rehabilitation emerges as a vital component in the long-term recovery trajectory of veterans. Gyang et al.³⁷ and Bhagawati³⁸ emphasize that facilitating a return to meaningful employment contributes positively to PTSD management by restoring functional capacity and reinforcing social networks, both of which are essential for symptom reduction. The shift from military to civilian life presents distinct challenges for those with PTSD, making customized vocational programs particularly effective in improving psychological well-being and life satisfaction³⁸. Given the chronic course of PTSD, sustained intervention is necessary; research indicates that symptom recurrence is frequent, highlighting the importance of continuous support and adaptive rehabilitation strategies to sustain gains and avert relapse³⁷. This reality supports the implementation of structured, longitudinally oriented

programs at facilities such as the 82 Division Hospital Rehabilitation Centre, where ongoing evaluation and tailored adjustments can optimize recovery outcomes for soldiers affected by PTSD.

CONCLUSION

In summary, the factors influencing PTSD among personnel at the Headquarters 82 Division Nigerian Army Enugu are varied, spanning combat-related trauma, hereditary vulnerabilities, familial relationships, social stigma, and co-occurring medical or psychiatric conditions. A comprehensive approach that accounts for this complexity is essential to adequately address the mental health needs of military personnel during their recovery process. Furthermore, while early rehabilitation services represent a crucial component of care, their efficacy is closely tied to the manner in which they are designed, implemented, and individualized. For many soldiers, prompt psychological support can substantially reduce the enduring impact of PTSD. Nonetheless, heterogeneity in treatment responses underscores the necessity for more resilient and flexible mental health services within military healthcare systems.

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