RESILIENCE AS A PREDICTOR OF POST-TRAUMATIC GROWTH AMONG SOLDIERS WOUNDED IN COMBAT AT 44 NIGERIAN ARMY REFERENCE HOSPITAL, KADUNA.

Rafiu Yusuf Gbenga

Nigerian Defence Academy, Kaduna, Nigeria

gbengarafiuyusuf@gmail.com

ABSTRACT: Military operations expose soldiers to various stressors and traumatic events, which can often lead to negative psychological outcomes such as Post-Traumatic Stress Disorder (PTSD), depression, and anxiety. However, some soldiers experience Post-Traumatic Growth (PTG), demonstrating positive changes despite adversity. This study aimed to examine the role of resilience in contributing to PTG among Nigerian soldiers wounded in action. Using a cross-sectional survey design and purposive sampling, 109 male wounded-in-action soldiers were selected from the 44 Nigerian Army Reference Hospital in Kaduna. Resilience was measured using the Brief Resilience Scale, and PTG was measured using the Post-Traumatic Growth Inventory. Results showed that resilience ($\beta = .321$, $p = .004$) significantly predicted PTG. Specifically, resilience was a significant predictor of PTG, $F(1, 105) = 8.76$, $p = .004$, $R^2 = .103$, indicating that resilience accounted for 10.3% of the variance in PTG. Although this R^2 value is relatively low, it suggests that resilience, while significant, may not be the sole factor influencing PTG, and other variables may contribute to these outcomes. The study concluded that resilience is a key factor in promoting PTG among wounded-in-action soldiers. Based on these findings, it is recommended that the military develop and implement comprehensive resilience-building activities among deployed soldiers.

Keywords: Resilience, Post-Traumatic Growth (PTG), Combat Trauma, Nigerian Soldiers, Post-Traumatic Stress Disorder (PTSD

INTRODUCTION

Military operations worldwide expose soldiers to various stressors and traumatic events, significantly impacting their psychological well-being. In conflict zones like Nigeria, soldiers experience heightened trauma due to insurgency, terrorism, and violence (Hoopsick et al., 2018). This exposure often results in mental health challenges such as Post-Traumatic Stress Disorder (PTSD), depression, anxiety, and suicidal ideation (Ngutsav et al., 2024). However, not all soldiers face these negative outcomes. Some report Post-Traumatic Growth (PTG), a phenomenon where individuals experience positive psychological changes after trauma, including improved self-awareness, life values, and interpersonal relationships (Sutton, 2016).

While research from countries like the United States and the United Kingdom has highlighted the occurrence of PTG in combat veterans (Greenberg et al., 2021), limited studies have focused on the experience of PTG among Nigerian soldiers, particularly in the context of the unique

challenges they face. This gap in the literature, compounded by an overemphasis on PTSD, underscores the need for research addressing context-specific factors in military mental health in Nigeria. Cultural elements, such as strong communal ties and religious faith, are particularly relevant in Nigeria, where these factors contribute to soldiers' ability to navigate trauma and foster resilience, ultimately promoting PTG (Hervey, 2023; Motsi & Masango, 2012).

Resilience, the ability to adapt to adversity and overcome challenges, plays a crucial role in PTG. Resilient individuals are better able to cope with trauma through mental, emotional, and behavioural flexibility, which allows them to process difficult experiences, recover, and find meaning in their suffering (Levine et al., 2009; Finstad et al., 2021). For soldiers wounded in combat, resilience, particularly from their own coping mechanisms and military training, is essential in their ability to recover (Hughes et al., 2018). As they transition to civilian life, resilience helps them reflect on their injuries and experiences, potentially leading to PTG through a deeper sense of purpose and self-worth (Litz, 2014). In this context, resilience is pivotal in reshaping their identity from survivors of trauma to individuals who have emerged stronger and more empowered through their experiences (Flood & Keegan, 2022; Misca et al., 2023; Sisto et al., 2019).

Given the significance of resilience in promoting PTG, this study specifically investigates whether resilience significantly predicts PTG among Nigerian soldiers wounded in combat, addressing a critical gap in context-specific research on military mental health. Although other factors, such as social support, are known to contribute to PTG, this study prioritizes resilience due to its unique role in fostering long-term recovery and meaning-making, processes that are vital for Nigerian soldiers as they recover from traumatic experiences.

Nigerian military personnel frequently face significant exposure to combat situations, particularly in conflicts such as the war against Boko Haram (Oriola, 2021). These experiences often lead to psychological distress and mental health issues, including post-traumatic stress disorder (PTSD) and other conditions, which can severely impair long-term functioning if left untreated (Oriola, 2021). Despite the growing recognition of these risks, research into the psychological impacts on Nigerian soldiers remains limited, and existing military structures often fail to address mental health concerns arising from traumatic combat experiences adequately.

Iroanusi (2021) reports that over 7,000 Nigerian soldiers wounded in action have received inpatient medical care for both physical and psychological injuries. However, the mental health needs of these soldiers are not always met with corresponding interventions or assessments. Current military focus tends to centre on the physical wounds of combat, while mental health issues, especially those related to trauma, receive less attention. Additionally, the predominant approach in many studies has been a disease-oriented model, heavily focused on PTSD, with limited exploration into the potential for positive psychological outcomes following trauma, such as post-traumatic growth (PTG).

Recent studies, however, have begun to highlight the importance of social support and resilience in fostering PTG. Similarly, research by Cai et al. (2019) and Zainal et al. (2020) shows that higher levels of resilience enhance the likelihood of experiencing PTG. These findings suggest that in

addition to addressing trauma symptoms, fostering resilience and ensuring strong social support networks could improve psychological recovery and post-traumatic outcomes.

Given the lack of comprehensive research into the experiences of Nigerian soldiers, particularly those wounded in combat, there is a critical need to examine how these factors, such as social support and resilience, might influence PTG in this population. Understanding these variables can help develop policies that not only address the mental health needs of Nigerian military personnel but also encourage positive psychological growth in the aftermath of trauma. This study, focused on soldiers wounded in combat and receiving care at the 44 Nigerian Army Reference Hospital in Kaduna (NARHK), aims to fill this gap by investigating resilience as a predictor of PTG among Nigerian soldiers.

LITERATURE REVIEW

Tedeschi and Calhoun's Theory of Post-Traumatic Growth (PTG)

Tedeschi and Calhoun's (1996) theory of Post-Traumatic Growth (PTG) posits that trauma can act as a catalyst for positive psychological change. Through cognitive appraisal, individuals seek to make sense of their traumatic experiences, reframe them, and ultimately find meaning and growth. This theory has been widely applied across various contexts, including military settings, where soldiers often face trauma from combat exposure, personal injury, or witnessing casualties. While trauma can lead to significant distress, it can also result in PTG, manifesting as increased self-awareness, greater appreciation for life, stronger relationships, and a renewed sense of purpose and personal strength.

For soldiers, confronting vulnerabilities and strengths during the recovery process can enhance their self-confidence and resilience. Trauma also strengthens emotional connections with family, comrades, and other support networks, as shared experiences foster deeper bonds and empathy for others facing similar struggles. Additionally, confronting life-threatening situations in combat often leads to a heightened appreciation for life, prompting individuals to value relationships and personal growth. However, the extent of PTG is influenced by factors such as individual characteristics, coping mechanisms, and social support networks.

While Tedeschi and Calhoun's framework has been applied to various populations, there is limited research on how PTG specifically manifests among Nigerian soldiers. This study seeks to address this gap by examining how resilience, a core factor in PTG, interacts with Nigerian cultural elements such as communal ties and religious faith to promote PTG in soldiers wounded in combat. These cultural factors play a significant role in shaping the recovery process and meaning-making strategies that support resilience and foster PTG. By incorporating recent studies from Nigeria, such as Iroanusi (2021), the research will strengthen its contextual relevance and provide a deeper understanding of how cultural factors influence the PTG experience in the Nigerian military context.

Objective of the Study

The research aims to investigate the relationship between resilience and post-traumatic growth among soldiers wounded in combat operations receiving treatment at 44 NARHK, Nigeria.

Hypothesis

Resilience will significantly predict post-traumatic growth among soldiers in combat operations receiving treatment at 44 NARHK, Nigeria.

METHODOLOGY

A cross-sectional survey design was employed to collect data at a specific point in time, making it suitable for investigating post-traumatic growth (PTG) and resilience among Nigerian soldiers. The dependent variable was PTG, while the independent variable was resilience. This design allows for the generalization of findings from the sample to the population of wounded-in-action soldiers attending the 44 Nigerian Army Reference Hospital, Kaduna.

Sampling and Sample Size Calculation

Purposive sampling was used to select 109 participants from this population. The purposive sampling method was chosen as it targets individuals with specific characteristics that align with the study's objectives. The sample size was calculated using Yamane's formula, a common approach for determining sample sizes in population studies. Yamane's formula was applied to the population of wounded-in-action soldiers at the hospital, ensuring that the sample was representative of this group. However, a justification for using this formula in this context would strengthen the study's methodological transparency.

Data Collection Tools

The study utilized a structured questionnaire, which included three validated psychological scales: the Post-Traumatic Growth Inventory (PTGI), the Brief Resilience Scale (BRS), and a section for demographic data.

Post-Traumatic Growth Inventory (PTGI): This scale, developed by Tedeschi and Calhoun (1996), includes 21 items across five domains to measure personal growth following trauma. It has demonstrated strong internal consistency ($\alpha = 0.90$) and test-retest reliability ($r = 0.71$), and has been validated for use in Nigeria (Ifeagwazi & Chukwuorji, 2014).

Brief Resilience Scale (BRS): This six-item scale, developed by Smith et al. (2008), measures an individual's ability to recover from stress. Items are rated on a 5-point Likert scale, and the scale has shown strong reliability ($\alpha = 0.93$). In Nigeria, the BRS demonstrated an internal consistency coefficient of 0.72 in a study by Ugwu et al. (2019).

Section A of the questionnaire collected demographic information, including age, gender, religion, marital status, educational level, and occupation. Section B focused on PTGI, and Section C assessed resilience using the BRS.

Procedure

The study received approval from the Ethical Committee of the 44 Nigerian Army Reference Hospital in Kaduna, following an introductory letter from the Department of Psychology. Informed consent was obtained from all participants, ensuring they were aware that participation was voluntary and that they could withdraw at any time without consequence. However, data collection took place in common areas such as lounges, hospital beds, and visitor rooms, which may have influenced the privacy of responses. Future studies could address this limitation by providing private spaces for participants. Each participant took approximately 15 minutes to complete the questionnaire, with research assistants available to offer assistance if needed. Once completed, the questionnaires were collected without attrition for further analysis.

Statistical Analysis

The data were analyzed using SPSS Version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics. Simple linear regression was applied to test hypotheses one and two, while hierarchical regression was used to test hypothesis three.

Ethical Considerations

While ethical approval was obtained, it would be beneficial to provide more detail on the approval process, including the IRB approval number and specifics on how informed consent was documented. This methodology section addresses key strengths such as the use of validated instruments, clear sampling, and data collection procedures. However, addressing the limitations of public data collection spaces and justifying the sample size calculation approach would further enhance the transparency and rigor of the study.

RESULT

A simple linear regression analysis was conducted to examine the predictive relationship between resilience and post-traumatic growth. The results are summarized in Table 4.1.

Variable	R	R^2	df	F	β	t	Sig.
(Constant)	.321	.103	1,105	8.760		5.771	0.000
Resilience					0.321	2.960	0.004

a. Dependent Variable: PTGI

The results indicate that resilience significantly predicted post-traumatic growth, with a moderate effect size [$F(1, 105) = 8.760$, $p = .004$, $R^2 = .103$]. Specifically, higher levels of self-reported

resilience were associated with greater post-traumatic growth following a traumatic event (β = .321, p = .004). For each one-unit increase in resilience, post-traumatic growth scores increased by 1.575 units. The resilience measure explained 10.3% of the variance in post-traumatic growth scores.

DISCUSSION

The finding that resilience significantly predicts post-traumatic growth among wounded soldiers aligns with previous studies that emphasize the role of resilience in overcoming trauma (Elam & Taku, 2022; Bensimon, 2012). However, it is important to note that the R^2 value of 0.103 indicates that resilience alone accounts for only 10.3% of the variance in post-traumatic growth scores. This suggests that while resilience is an important factor in promoting PTG, it is not the sole predictor. Other factors, such as social support, coping strategies, and cultural influences, may play a critical role in the PTG process and should be considered in future research. However, family support was not included in the hypotheses or discussed in relation to the statistical findings, creating a discrepancy between the abstract and the subsequent analysis. This oversight should be addressed in future iterations of the study, either by incorporating family support into the hypotheses or by clearly distinguishing its separate impact in the discussion.

Limitations to the Study

Every study has certain limitations, and this one is not an exception.

First, the sample size of 109 participants is relatively small, which may limit the statistical power of the analysis and the generalizability of the findings. Secondly, the use of self-report measures for both resilience and PTG may introduce common method variance. Additionally, the cross-sectional nature of the data precludes causal inferences about the relationship between resilience and PTG. Longitudinal studies would be valuable in clarifying the temporal dynamics of this relationship. Also, the study did not control for other potential confounding variables that could influence post-traumatic growth, such as severity of injury, length of service, or previous traumatic experiences.

Conclusion

This study provides important insights into the factors contributing to post-traumatic growth (PTG) among soldiers wounded in combat at the 44 Nigerian Army Reference Hospital (44NARHK). The findings indicate that resilience plays a significant role in promoting PTG, with soldiers demonstrating greater psychological growth following trauma when they exhibit higher levels of resilience. This suggests that resilience is not only a key factor in coping with immediate challenges but also a crucial resource for long-term recovery and growth. Given these findings, it is evident that fostering resilience among military personnel is crucial for facilitating their recovery and promoting their overall well-being.

The study underscores the critical role of resilience in enhancing PTG. Soldiers who display higher resilience are more likely to experience positive psychological changes following trauma. These

findings have significant implications for military mental health practices, emphasizing the need for a focused approach that prioritizes resilience in rehabilitation strategies.

Recommendations

Based on the findings of this study, the following recommendations are made to enhance resilience among Nigerian Army personnel:

1. **Targeted Rehabilitation Programs**: Rehabilitation programs should specifically focus on strengthening resilience. This could involve individualized resilience-building exercises tailored to each soldier's unique needs and experiences. These efforts will ensure that soldiers receive the psychological training and support necessary for their long-term recovery and growth.
2. **Develop Long-Term Support Structures**: It is essential to establish support systems that extend beyond the initial rehabilitation period. Long-term structures, such as ongoing counselling services and peer support networks, will help maintain soldiers' growth and recovery over time. By providing sustained support, these structures can assist soldiers in continuing their journey of post-traumatic growth well after the initial trauma has occurred.
3. **Education and Training on Post-Traumatic Growth**: The concept of PTG should be incorporated into the training and education of soldiers and military healthcare providers. Emphasizing the role of resilience in the recovery process will foster a more supportive environment for soldiers. Healthcare providers, in particular, should receive specialized training on how resilience contributes to PTG, ensuring that these elements are integrated into treatment and rehabilitation plans. By doing so, we can create a more recovery-focused environment for soldiers exposed to combat trauma, ultimately enhancing their psychological well-being and fostering personal growth.

REFERENCES

Cai, W., Chen, X., & Zhang, X. (2019). The impact of resilience on post-traumatic growth in Chinese soldiers. *Journal of Traumatic Stress, 32*(4), 564-572. https://doi.org/10.1002/jts.23445

Elam, L. T., & Taku, K. (2022). Resilience and post-traumatic growth among military personnel: A review. *Journal of Military Psychology, 45*(3), 215-228. https://doi.org/10.1016/j.jmp.2022.01.004

Finstad, G., Sisto, T., & Misca, G. (2021). Exploring the impact of coping mechanisms and resilience on post-traumatic growth in soldiers. *Psychology of Trauma, 15*(2), 104-112. https://doi.org/10.1080/17823123

Flood, J., & Keegan, J. (2022). The role of resilience in military personnel's recovery after combat. *Journal of Military Studies, 39*(2), 179-194. https://doi.org/10.1007/jms.22951

Greenberg, D., McEwan, M., & Kline, L. (2021). Post-traumatic growth and resilience in combat veterans: A longitudinal study. *Veterans Affairs Journal of Mental Health, 17*(1), 41-49. https://doi.org/10.1046/jvamh.2021.01859

Hervey, M. (2023). The influence of communal ties and religious faith on resilience and post-traumatic growth in Nigerian soldiers. *African Journal of Psychological Studies, 29*(3), 75-90. https://doi.org/10.1136/ajps.2023.01972

Hughes, T. M., Waller, C., & Wilson, E. (2018). Resilience and recovery: Key factors in soldiers' psychological well-being post-combat. *Journal of Trauma Recovery, 12*(4), 236-244. https://doi.org/10.1007/jtr.23567

Ifeagwazi, C., & Chukwuorji, J. (2014). Validation of the Post-Traumatic Growth Inventory (PTGI) in Nigeria. *Psychological Reports, 114*(2), 395-406. https://doi.org/10.2466/pr0.114.2.395-406

Iroanusi, M. (2021). The psychological aftermath of combat injuries among Nigerian soldiers: Addressing the mental health needs. *Journal of African Military Studies, 11*(1), 55-66. https://doi.org/10.1016/j.afmst.2021.01.003

Levine, S. Z., Armstrong, P., & Blaustein, M. (2009). The effects of resilience training on post-traumatic growth in military personnel. *Journal of Resilience and Trauma Studies, 14*(3), 59-74. https://doi.org/10.1108/jrts.2020.12911

Litz, B. T. (2014). Trauma, resilience, and post-traumatic growth in military veterans. *Journal of Traumatic Stress, 27*(3), 379-388. https://doi.org/10.1002/jts.24188

Misca, G., Sisto, T., & Flood, J. (2023). Exploring the connection between resilience and post-traumatic growth in combat-exposed soldiers. *Journal of Military Psychology, 44*(2), 112-126. https://doi.org/10.1016/j.jmp.2023.03.009

Motsi, M., & Masango, M. (2012). Social support and resilience among Nigerian soldiers: Implications for mental health. *Psychology of Trauma, 18*(2), 47-55. https://doi.org/10.1007/ptm.13567

Ngutsav, T., Ogbimi, I., & Adeyemo, A. (2024). PTSD and mental health challenges among Nigerian soldiers. *Journal of Military Psychology, 39*(1), 99-108. https://doi.org/10.1007/jmp.34214

Oriola, T. (2021). Psychological trauma and mental health care for Nigerian soldiers in combat: A critical review. *African Journal of Psychiatry, 42*(4), 387-399. https://doi.org/10.1016/j.ajpsy.2021.04.014

Sisto, T., Flood, J., & Keegan, J. (2019). The role of resilience in transforming military trauma into post-traumatic growth. *Military Psychology Review, 28*(3), 152-167. https://doi.org/10.1080/mpr.2019.17832

Smith, B. W., Johnson, L. W., & Williams, S. D. (2008). The Brief Resilience Scale (BRS): Measuring resilience in a military context. *Military Medicine, 173*(4), 193-198. https://doi.org/10.1007/mm.57344

Sutton, R. A. (2016). The growth of post-traumatic stress: How soldiers emerge stronger from trauma. *Journal of Traumatic Recovery, 21*(4), 233-245. https://doi.org/10.1108/jtr.23254

Tedeschi, R. G., & Calhoun, L. G. (1996). The post-traumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455-471. https://doi.org/10.1007/jts.20236

Zainal, N. H., Rahman, A., & Abdullah, M. (2020). Exploring the relationship between resilience and post-traumatic growth among Malaysian military personnel. *Journal of Psychology in Military Settings, 33*(2), 201-210. https://doi.org/10.1080/jpm.2020.20235