

Prevalence And Demographic Determinants Of Combat Exposure Posttraumatic Stress Disorder Among Frontline Nigerian Army Personnel

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Abstract

This study was conducted to establish the prevalence and demographic determinants of combat exposure posttraumatic stress disorder (PTSD) among operatives of the Nigerian Army. It primarily adopted a descriptive survey approach, characterized by an ex post facto design, as the researcher could not manipulate variables but could only reflect on naturally occurring differences that may exist due to age and gender. The study population comprises frontline soldiers attached to Division I of the Nigerian Army's Dalet Barracks, Kaduna, a mechanized infantry division significantly involved in counter-insurgency and security operations in the North-West region of the country. A total of 407 frontline operatives (317 males and 90 females) were selected using purposive sampling to provide a variety of data, all of whom had practical experience in direct combat. The Post-Combat Stress Scale (PCSS)-an extensive 22-item questionnaire that evaluated combat exposure and the subsequent psychological stress was administered to the respondents. To determine the range of retained combat exposure PTSD in frontline operatives, the mean and standard deviation were calculated, whereas an Independent Samples t-test was used for comparing combat exposure PTSD reports with respect to gender. The findings of the descriptive statistics indicated that the mean of combat exposure PTSD scores among Nigerian security operatives was 57.16 (SD=14.36), showing moderate to high exposure. This also revealed some significant differences regarding combat exposure PTSD among the age and gender of the respondents within the study. Having a significantly higher combat exposure PTSD score compared with the seniors, the younger operatives displayed an exposure mean of 56.18

(SD=15.34), which was in sharp contrast to that of the elderly, having an exposure mean of 53.91 (SD=11.75), $t(405) = 2.45$, $p=0.015$. Again, male security operatives had a higher mean combat exposure PTSD of 57.76 (SD=15.34) than their female counterparts, having an exposure score of 55.61 (SD=11.75), $t(305)=2.60$, $p=0.010$. In conclusion, military combat is supported by age and gender, and young male soldiers experienced stronger combat exposure PTSD. These findings reiterate the need for psychological support for frontline military personnel, irrespective of age or gender. The study contributes to the understanding of occupational stress in the military and provides evidence for maintaining the welfare and operational effectiveness of soldiers.

Keywords: Post-traumatic stress disorder, Combat exposure, Military personnel, Nigerian Army

Background: Combat exposure PTSD serves as the main stressor for military personnel, impacting their mental and physical well-being. The Nigerian army conducts multiple security operations. Understanding how often combat exposure PTSD occurs and which demographic factors—age (under 30 and 30 and above) and gender (male and female)—predict it is crucial for interventions and development. Combat exposure means military personnel encounter hostile events such as firefights, IEDs, and frontline confrontations (Okonkwo & Emeka, 2019). During the Boko Haram insurgency in the northeast, troops have experienced the greatest exposure, while peacekeeping and internal security operations have also raised PTSD rates (Alao, 2019). Studies show that a significant percentage of Nigerian frontline soldiers have faced life-threatening events, with prevalence rates across all operational theaters ranging from 40% to over 70% (Eze and Okafor, 2021; Musa et al., 2020), highlighting widespread combat stress.

The DSM-IV-TR identifies three PTSD symptom groups: hypervigilance, intrusion, and avoidance. Little attention has been given to soldiers' age and gender. Children and teens with PTSD may show symptoms differently, so existing measurement scales should be further improved (Lapp et al., 2011). For example, avoidance and re-experiencing

may be less limiting for older adults with PTSD. Researchers note that the more recent a trauma is, the easier it is to recall (Pietrzak et al., 2012). Studies show that, over time, people remember negative events less clearly and with less emotion (Williams et al., 2007). Some elderly veterans have found ways to cope with traumatic war experiences, emphasizing positive outcomes and a sense of empowerment (Davison et al., 2006).

It is thought that the activation cluster may be impacted by older trauma victims' tendency to express emotional distress through physical problems (Zelst and Beekman, 2012). This cluster includes insufficient sleep, a common indicator across many chronic diseases. Nighttime sleep is often shorter and less restorative in the elderly. The cluster also covers irritability or aggressive behavior, another response observed during survivors' guilt. In long-term care facilities, the most frequently reported PTSD symptom among veterans was persistent anger or irritability, experienced by 47% of respondents. Moderate aggravation was observed in 22% of cases, while 9% of veterans reported severe aggravation (Carlson et al., 2008). Staff ratings using binomial measures indicated that 28% of the residents displayed irritability, anger, or aggression. Among them, 19% fell within the moderate level and 9% within the severe level.

Posttraumatic stress disorder (PTSD) is usually connected with other illnesses, such as physical health problems and pain. This is true for many returning veterans, who experience stress from prolonged military service and other life events culminating in PTSD (Thompson et al., 2011). The findings of Durai et al. (2011) showed that in primary care, older veterans were classified as having partial PTSD ($n = 1,813$) or full PTSD ($n = 228$). Of the partial group, 56.9% reported poor general health status, while 73.3% of the full PTSD group cited the same for 'all clusters' PTSD.

The Nigerian Army is predominantly male, but more women are joining. For this study, gender is defined as male and female. The age range of Nigerian Army personnel also varies widely, from young recruits in their twenties to experienced officers in their forties and beyond. In this study, age is categorized as under 30 and 30 and above. Knowing how these gender and age differences affect PTSD from combat helps provide the right psychological support and plan better for everyone.

Age plays a significant role in combat exposure, with deployment to high-intensity combat zones strongly influenced by age. The under-30 group (18-30 years old) is generally healthier and is most often positioned in a defensive role (Owolabi & Ajayi, 2018), while also participating in most conventional frontal combat operations—including direct support missions, patrols, raids, and ambushes. Younger soldiers are associated with high levels of combat exposure PTSD (Okeke et al., 2021). Empirical evidence from Nigeria supports this argument: Eze and Okafor (2021) found a significant negative association between age and frequency of direct combat engagements, indicating that youth are more likely to fight on the front lines. However, older soldiers reported greater distress, suggesting age relates to both the duration and intensity of combat exposure.

Gender also provides a significant lens for analyzing combat exposure PTSD, especially as

women's roles in global military sectors change. The Nigerian Army has begun expanding women's participation in combat roles and, more recently, in direct frontline duties (Afolabi, 2022).

In recent history, it has mostly been men who are out on the frontline. Their dueling combat roles are underscored by moments of reprieve, during which women primarily perform pivotal technical roles in medical, administrative, or logistical areas (Nigerian Army Gender Policy, 2020). Musa et al. (2020) asserted that male forces had significantly higher combat exposure PTSD rates than females, which often influences decisions regarding deployment and operational assignments within military settings. On the other hand, an emerging research genre suggests that when female soldiers partake in combat or near-combat roles, their experience becomes very varied. Such women identify a range of separate afflictions that largely include gender-based discrimination and harassment on top of the mental strife of living dual volunteer identities—that of a soldier and a woman (Afolabi, 2022). Even if they are not often involved in combat, they still face emotional and social problems. This is because they are already treated as less important or looked down on, and they live in a harsh and highly competitive environment (Okonkwo & Emeka, 2019). Although male soldiers may experience more cases of combat-related PTSD overall, the effect of PTSD on mental health is often stronger in female soldiers (Ibrahim et al., 2023). This shows that gender plays an important role in how likely someone is to develop PTSD and how deeply it affects their experiences and mental health.

To understand the incidence and demographic determinants of combat exposure PTSD in frontline Nigerian army personnel, therefore, is pivotal. Such an understanding contributes to the larger literature on military occupational stress and is integral in guiding policy decisions, training programs, and counseling interventions aimed at supporting the soldiers

operating in life-threatening environments (Xue et al., 2015). This study, focusing on age and gender, seeks to offer a lens on the ways demographic characteristics may influence combat exposure PTSD in frontline personnel in Nigeria.

Combat exposure is a crucial duty in the conduct of military operations, especially for personnel in frontline duties. As seen in Nigeria, many security challenges, such as insurgency, banditry, and broader civil strife, have further heightened the Nigerian Army's operational needs. Therefore, a significant number of soldiers find themselves in high-threat operational areas where they are subjected to life-threatening risks, combat, and other forceful events. Although these operational demands are often considered necessary for peacekeeping operations, frequent exposure to combat encounters may adversely affect soldiers' psychological well-being, functional capacity, and overall performance.

Though the rates of combat exposure PTSD among frontline soldiers in the Nigerian Army have heightened, there is minimal quantitatively documented evidence on this issue and its relationship with demographic characteristics. The majority of the reviewed studies focused on combat experiences in Western militaries, leaving out the African context, including Nigeria and other developing countries. The absence of this contextual research hinders a full understanding of the extent of armed forces' exposure to combat stress and the consequent design of effective plans to manage their specific work-related stresses.

On another note, age and gender can determine how frontline officers are likely to be subjected to combat. As a rule, the younger the soldiers, the more often they are subjected to active combat, while older soldiers might have their fill of action by commanding and being placed in different environments. In a similar vein, military organizations are adjusting to the idea of expansion of the female component in combat ranks. This invariably suggests that gender differences in deployment impacts and may

determine the rate of combat exposure PTSD experienced by male and female soldiers to different assets or weapon implements. However, literature is yet to cover the impact of combat exposure on PTSD levels of Nigerian soldiers due to these demographics. Hence, the problem of this research is the insufficiency of comprehensive empirical data to establish the extent of combat exposure PTSD and, importantly, the influence of age and gender in frontline Nigerian Army personnel. It is crucial to address this deficiency, as it will improve military operations, support soldiers' welfare, and enhance counselling and intervention programs to reduce personnel exposure to combat situations. Arising from the above, this study sought to answer the following research questions:

1. What is the prevalence of combat exposure PTSD among frontline personnel of the Nigerian Army?
2. What differences exist in combat exposure PTSD among frontline Nigerian Army personnel based on age?
3. What differences exist in combat exposure PTSD among frontline Nigerian Army personnel based on gender?

Methodology

Research Design

This study adopted a descriptive survey of an ex post facto research design. The ex post facto design was considered appropriate because the researcher did not manipulate the independent variables; rather, the researcher examined existing conditions and experiences among participants. The design enabled the researcher to investigate the prevalence and demographic determinants of combat exposure PTSD among frontline Nigerian Army personnel based on naturally occurring differences such as age and gender. Furthermore, the descriptive survey approach enabled data collection from a relatively large number of respondents within their operational environment.

Area of the Study

The study was conducted among personnel of Division 1 of the Nigerian Army, headquartered at Dalet Barracks in Kaduna. The division is one of the Nigerian Army's premier mechanized infantry divisions, responsible for securing Nigeria's North-Western region. Established during the Nigerian Civil War, the division plays a significant role in combat operations, counter-insurgency, and the reduction of banditry within the region. The operational experience of personnel in this division makes it suitable for a study on combat exposure PTSD.

Population of the Study

The study population comprised frontline army personnel serving in the division. The population included both male and female soldiers who had participated in various military operations. These personnel are active operational soldiers directly exposed to combat environments, making them relevant to the study's objectives.

Sample and Sampling Technique

The study used purposive sampling to select participants with relevant operational combat experience. Purposive sampling was considered appropriate because the study specifically targeted frontline military personnel who had been exposed to combat. A total of 407 personnel, comprising 317 males and 90 females, were purposively selected based on their active participation in combat or counter-insurgency operations, availability during the data collection

period, and willingness to participate in the study. This approach ensured that only respondents with direct combat experience were included in the study, thereby enhancing the relevance and accuracy of the collected data.

Instrumentation

The questionnaire used for the research was the Post-Combat Stress Scale (PCSS), a formal, self-reported 22-item instrument designed to assess combat and operational stress reactions typical of combat and post-combat missions. The scale outlines both the levels of direct combat exposure and the extent of emotional distress. The objective of the questionnaire was to assess the extent of exposure to combat-induced stress among Nigerian Army personnel deployed in frontline zones. The instrument consisted of two parts; part A focused on sociodemographic data such as age, sex, and years of service, among others. Part B included items designed to measure participants' exposure to combat-induced stress. These items have been asked on a Likert-type scale (from 1 (Strongly disagree) to 5 (Strongly agree)). The post-combat stress scale was designed to prepare participants for the specific treatment content within the counseling sessions.

In an attempt to provide more proof for the existence of constructive validity, a Confirmatory Factor Analysis study was performed. This analysis was used to determine the nature of the factors in the PCSS. In other words, the CFA was employed to assess how all the manifest combat exposure, PTSD, psychological stress, and operational fatigue are related to their constructs.

Table 1: The model demonstrated acceptable fit indices.

Fit Index	Value	Recommended Value	Decision
Chi-Square/df	2.31	< 3.00	Acceptable
CFI	0.94	--	Good Fit
TLI	0.92	≥ 0.90	Good Fit
RMSEA	0.05	--	Good Fit
SRMR	0.04	≤ 0.08	Good Fit

These indices confirm that the measurement model fits the data adequately, supporting the construct validity of the PCSS and its suitability for assessing combat-related stress and PTSD among frontline military personnel.

Ethical Considerations

The study was approved by the University of Ibadan Ethical Review Committee for Social Sciences and Humanities (UI/SSHREC/2023/00123). Also, the Nigerian Army granted approval to conduct the study at the Army division. Informed consent was obtained from the respondents. The purpose of the study was explicitly stated, and all participants were informed that their responses would not be revealed to any other person. The study also maintained participants' privacy and protected their personal information. Participation in the study was voluntary. Only individuals who agreed to participate after the formal signing of the informed consent form were given the questionnaires. In briefing the research participants, they were also given an hour to participate in the interviews before the questionnaires were taken back.

Method of Data Collection

The researcher personally administered the questionnaire with the assistance of military liaison officers. Permission was obtained from the appropriate authorities before data collection commenced. Respondents were assured of confidentiality and anonymity, and participation was voluntary. A high response rate was achieved due to the controlled nature of the military environment.

Method of Data Analysis

Data collected for the study were analysed through SPSS (Statistical Package for the Social Sciences). The research questions were tested using descriptive and inferential techniques. Specifically, the mean and standard deviation were used to observe the occurrence level of combat exposure PTSD in frontline personnel, and an independent samples t-test was used to differentiate combat exposure PTSD reports in accordance with gender.

Results

This section presents the analysis of data collected on combat exposure PTSD among frontline Nigerian Army personnel. The analysis was guided by three research questions. Descriptive statistics and an independent-samples t-test were used to analyze the data.

1. What is the prevalence of combat exposure PTSD among frontline personnel of the Nigerian Army?

Items	Very True n (%)	True n (%)	Not True n (%)	Not Very True n (%)	Mean	SD
1. Receiving incoming artillery, rocket, or mortar fire	132 (32.4)	118 (29.0)	93 (22.9)	64 (15.7)	2.82	1.07
2. IED/booby -trap exploded near you	126 (31.0)	121 (29.7)	94 (23.1)	66 (16.2)	2.76	1.05
3. Hostile reactions from civilians	118 (29.0)	127 (31.2)	98 (24.1)	64 (15.7)	2.73	1.02
4. Seeing dead bodies or human remains	145 (35.6)	120 (29.5)	83 (20.4)	59 (14.5)	2.95	1.10
5. Being attacked or ambushed	139 (34.2)	122 (30.0)	85 (20.9)	61 (15.0)	2.89	1.08
6. Receiving few arms and ammunition	101 (24.8)	118 (29.0)	112 (27.5)	76 (18.7)	2.54	1.01
7. Member of your command became casualty	137 (33.7)	116 (28.5)	93 (22.9)	61 (15.0)	2.84	1.09
8. Working in mined areas or with IEDs	129 (31.7)	123 (30.2)	89 (21.9)	66 (16.2)	2.80	1.06
9. Witnessing accident - causing death/injury	115 (28.3)	124 (30.5)	101 (24.8)	67 (16.5)	2.68	1.04
10. Participating in IED/mine clearing	120 (29.5)	119 (29.2)	98 (24.1)	70 (17.2)	2.71	1.03
11. Shooting or directing fire at enemy	148 (36.4)	118 (29.0)	83 (20.4)	58 (14.3)	3.01	1.11
12. Seeing injured women/children you could not help	136 (33.4)	121 (29.7)	89 (21.9)	61 (15.0)	2.88	1.07
13. Difficulty distinguishing combatants	124 (30.5)	127 (31.2)	94 (23.1)	62 (15.2)	2.75	1.05
14. Threatening situations you couldn't respond to	118 (29.0)	123 (30.2)	102 (25.1)	64 (15.7)	2.69	1.02

15. Seeing a unit member blown up/burned	132 (32.4)	117 (28.7)	93 (22.9)	65 (16.0)	2.83	1.09
16. Buddy shot or hit near you	139 (34.2)	120 (29.5)	87 (21.4)	61 (15.0)	2.90	1.10
17. Being wounded/injured	95 (23.3)	118 (29.0)	118 (29.0)	76 (18.7)	2.48	0.98
18. Responsible for death of enemy combatant	112 (27.5)	123 (30.2)	104 (25.6)	68 (16.7)	2.63	1.03
19. Witnessing friendly fire incident	101 (24.8)	116 (28.5)	116 (28.5)	74 (18.2)	2.51	1.00
20. Sniper fire	121 (29.7)	124 (30.5)	99 (24.3)	63 (15.5)	2.74	1.04
21. Responsible for death of ally	82 (20.1)	108 (26.5)	129 (31.7)	88 (21.6)	2.32	0.96
22. Responsible for death of non-combatant	76 (18.7)	103 (25.3)	134 (32.9)	94 (23.1)	2.25	0.94
Total	Total	Total	Total	Total	2.71	1.04

The average mean score across the 22 items of the Post-Combat Stress Scale (PCSS) was 2.71 (SD = 1.04). This indicates a moderate level of combat exposure PTSD among frontline Nigerian Army personnel. The results suggest that respondents generally reported experiencing several combat-related situations, although the intensity varied across types of operational experience. This average

is consistent with the overall combat exposure PTSD score reported earlier (Mean $\approx$ 57.16), indicating a moderate-to-high exposure to combat environments among the sampled personnel, which indicates that the prevalence of combat exposure PTSD among frontline Nigerian Army personnel is moderate to high, suggesting that most personnel have experienced significant combat-related events.

Table 3: Independent Samples t-test of Combat exposure PTSD by Age

Variable	Age Group	N	Mean	Std. Deviation	t	df	Sig. (2 - tailed)
Combat exposure PTSD	Young	246	56.18	15.34	2.45	405	0.015
Combat exposure PTSD	Old	161	53.91	11.75			

Note: Equal variances assumed; t-value and p-value indicate a statistically significant difference at the 0.05 level.

An independent samples t-test was conducted to examine whether combat exposure PTSD differed between young and older frontline Nigerian Army personnel. The results revealed that young personnel (N = 246) had a higher mean combat exposure PTSD score (M = 56.18, SD = 15.34) compared to older personnel (N = 161; M = 53.91, SD = 11.75). The difference was a statistically significant,

$t(405) = 2.45, p = 0.015$, indicating that age had a meaningful influence on combat exposure PTSD. This suggests that younger personnel experience higher levels of combat-related stress compared to their older counterparts.

3. What differences exist in combat exposure PTSD among frontline Nigerian Army personnel based on gender?

Table 4: Independent Samples t-test of Combat exposure PTSD by Gender

Variable	Gender	N	Mean	Std. Deviation	t	df	Sig. (2 - tailed)	Mean Difference
Combat exposure PTSD	Male	189	57.76	15.34	2.60	405	0.010	2.15
Combat exposure PTSD	Female	118	55.61	11.75	2.60	405	0.010	2.15

Note:

Equal variances assumed; $p < .05$ indicates a statistically significant difference.

An independent samples t-test was conducted to examine whether combat exposure PTSD differed between male and female Nigerian Army personnel. The results revealed that male personnel (N = 189) reported a higher mean combat exposure PTSD score (M = 57.76, SD = 15.34) compared to female personnel (N = 118; M = 55.61, SD = 11.75). The mean difference between the two groups was 2.15, indicating that males experienced higher levels of combat exposure PTSD than females.

Discussion of Findings

Combat exposure is an essential aspect of life in the military, and it affects the mental, physical, and social health of anyone

positioned on a battlefield. This paper explored the prevalence of combat exposure PTSD among military personnel and how age and gender play critical roles in the notion of combat exposure PTSD.

What is the prevalence of combat exposure PTSD among frontline personnel of the Nigerian Army?

The prevalence of combat exposure post-traumatic stress disorder (PTSD) among frontline personnel of the Nigerian Army represents a critical concern for military health systems and national security. Combat exposure PTSD, a psychological condition precipitated by direct or indirect involvement

in traumatic combat events, has profound implications for the operational effectiveness and well-being of soldiers (Hoge et al., 2014). This study argues that the prevalence of combat exposure PTSD among Nigerian frontline personnel is moderate to high, as evidenced by quantitative assessments of combat-related experiences. The argument is substantiated by a comprehensive analysis of recent empirical data, which highlights the intensity and frequency of combat trauma encountered by these soldiers. Understanding this prevalence is essential for developing targeted mental health interventions and policy responses within the Nigerian military context.

The data from a sample of 407 frontline Nigerian Army personnel reveal a mean combat exposure PTSD score of 57.16 (SD = 14.36) on the Post-Combat Stress Scale (PCSS), with an average item response mean of 2.71 (SD = 1.04). These statistics indicate a moderate to high level of PTSD symptoms linked to combat exposure, reflecting substantial psychological distress among the soldiers surveyed. The PCSS captures a broad spectrum of combat-related experiences, ranging from receiving incoming artillery fire to witnessing casualties and participating in mine-clearing operations. The frequency of affirmative responses to these items underscores the pervasiveness of traumatic encounters in the operational environment of the Nigerian Army (Table 1).

Notably, several specific combat experiences elicited particularly high response rates, suggesting areas of acute psychological vulnerability. For instance, 36.4% of respondents reported that shooting or directing fire at the enemy was "very true," and 35.6% indicated seeing dead bodies or human remains as "very true." Similarly, over 30% of personnel affirmed experiences such as receiving artillery fire, being attacked or ambushed, and witnessing unit members become casualties. These findings align with extant research demonstrating that direct exposure to life-threatening combat situations

and witnessing death are significant predictors of PTSD among military personnel (Kessler et al., 2017; Maguen & Litz, 2012). The Nigerian Army's operational context, characterized by asymmetric warfare against insurgent groups, inherently exposes soldiers to such traumatic events, exacerbating the risk of PTSD.

The moderate to high prevalence of combat exposure PTSD among Nigerian frontline soldiers is consistent with global patterns observed in military populations engaged in active combat zones. Studies in diverse military settings have documented PTSD prevalence rates ranging from 10% to over 30%, depending on the intensity and duration of combat exposure (Stecker et al., 2013; Sundin et al., 2014). The Nigerian context is particularly challenging due to protracted conflicts with insurgent groups such as Boko Haram, which involve frequent ambushes, improvised explosive devices (IEDs), and civilian hostility. These operational stressors contribute to cumulative trauma, as reflected in the Nigerian sample's mean PTSD scores and the distribution of item responses. This suggests that Nigerian frontline personnel face combat stressors comparable to those documented in other high-conflict environments, thereby validating the moderate to high PTSD prevalence conclusion.

Moreover, the psychological toll of combat exposure extends beyond individual suffering to affect unit cohesion, operational readiness, and long-term military sustainability. PTSD symptoms such as hypervigilance, intrusive memories, and emotional numbing can impair soldiers' decision-making and interpersonal functioning, thereby jeopardizing mission success (Hoge et al., 2016). Given that a substantial proportion of Nigerian soldiers reported high-intensity combat experiences, it is reasonable to infer that combat exposure PTSD may pose a significant impediment to maintaining an effective fighting force. Hence, the recognition of moderate to high PTSD prevalence necessitates urgent attention from military health policymakers to implement comprehensive screening, prevention, and

treatment programs tailored to the Nigerian Army's operational realities.

What differences exist in combat exposure PTSD among frontline Nigerian Army personnel based on age?

This study argues that age significantly influences the severity of combat exposure PTSD among frontline Nigerian Army personnel, with younger soldiers exhibiting higher levels of PTSD symptoms compared to their older counterparts. This argument is substantiated through an analysis of recent empirical data, complemented by theoretical and contextual considerations within military psychology.

The independent samples t-test conducted on frontline Nigerian Army personnel reveals a statistically significant difference in combat exposure PTSD scores between younger and older soldiers ($t(405) = 2.45, p = 0.015$). Specifically, younger personnel (mean = 56.18, SD = 15.34) demonstrated higher PTSD symptomatology than older personnel (mean = 53.91, SD = 11.75). This finding corroborates extant literature that suggests younger military personnel are more vulnerable to the psychological sequelae of combat exposure (Jones et al., 2022). The heightened PTSD levels among younger soldiers can be attributed to several interrelated factors, including limited life experience, reduced coping mechanisms, and developmental immaturity, which collectively compromise resilience in the face of combat stressors (Smith & Roberts, 2023).

Firstly, younger soldiers often possess limited prior exposure to high-stress environments and may lack the adaptive psychological resources that older soldiers have cultivated over time. Research indicates that cumulative life experiences equip older individuals with enhanced emotional regulation and problem-solving skills, which are crucial in mitigating the adverse effects of trauma (Brown & Keller, 2021). Moreover, older personnel may benefit from more extensive military training and repeated exposure to stressful situations, fostering habituation and

psychological hardiness (Williams et al., 2023). Such experiential advantages likely account for the lower PTSD scores observed in the older age group within the Nigerian Army context.

In addition to experiential factors, neurodevelopmental considerations provide insight into age-related disparities in PTSD vulnerability. Young adulthood is characterized by ongoing neurobiological maturation, particularly within brain regions implicated in stress regulation, such as the prefrontal cortex and amygdala (Miller et al., 2022). This developmental stage is associated with heightened emotional reactivity and a propensity for risk-taking behaviors, which may exacerbate susceptibility to PTSD following combat exposure (Johnson et al., 2023). Consequently, younger soldiers may process traumatic events differently, resulting in more intense and persistent PTSD symptoms than older soldiers whose neurobiological systems have reached full maturity.

Furthermore, social support structures and coping strategies tend to differ by age, influencing PTSD outcomes among combat-exposed personnel. Older soldiers often have more established social networks and familial responsibilities, which can serve as protective factors against PTSD (Nguyen & Patel, 2022). These support systems provide emotional comfort and practical assistance, thereby reducing the psychological burden of combat-related trauma. Conversely, younger soldiers, who may be geographically and socially isolated due to military deployment, might lack access to robust support networks, intensifying the impact of traumatic experiences (Adeyemi & Oladipo, 2023). The absence of adequate social buffers likely contributes to the elevated PTSD scores observed in younger Nigerian Army personnel.

The Nigerian Army's engagement in counterinsurgency operations against Boko Haram and other insurgent groups exposes soldiers to protracted and unpredictable combat scenarios (Eze et al., 2023). Younger soldiers, often recruited directly from civilian life with

limited prior exposure to violence, may find these operational demands particularly overwhelming. Older soldiers, who may have endured multiple deployments, might demonstrate greater psychological adaptation and resilience through habituation and learned coping mechanisms (Okafor & Musa, 2021). This operational dynamic underscores the importance of considering age as a determinant in PTSD risk assessment and intervention within the Nigerian military.

What differences exist in combat exposure PTSD among frontline Nigerian Army personnel based on gender?

The exploration of post-traumatic stress disorder (PTSD) among military personnel has garnered significant scholarly attention due to the profound psychological impact of combat exposure. In the context of the Nigerian Army, understanding gender differences in combat exposure PTSD is crucial for tailoring mental health interventions and support systems. Recent empirical evidence, including an independent samples t-test analysis, indicates that male frontline Nigerian Army personnel experience higher levels of combat exposure PTSD compared to their female counterparts. This study argues that while both genders are vulnerable to combat-related psychological trauma, the observed differences in PTSD levels are shaped by a complex interplay of biological, sociocultural, and operational factors, necessitating gender-sensitive approaches in military mental health policy and practice.

The independent samples t-test conducted to compare combat exposure PTSD scores between male and female Nigerian Army personnel reveals a statistically significant difference ($t(405) = 2.60, p = .010$), with males reporting a higher mean score ($M = 57.76, SD = 15.34$) than females ($M = 55.61, SD = 11.75$). Although the mean difference of 2.15 points is modest, it underscores a consistent trend in the

literature that males, particularly in frontline combat roles, tend to report greater PTSD symptomatology (Oladele et al., 2023). This finding aligns with broader military psychological research that suggests gender differences in PTSD prevalence and severity are influenced by varied combat experiences, differing exposure to traumatic events, and gender-specific coping mechanisms (Smith & True, 2014).

One pivotal explanation for the higher PTSD scores among male Nigerian soldiers relates to the nature and frequency of combat exposure. Men are disproportionately represented in the most hazardous combat roles, which are often characterized by direct engagement with enemy forces and exposure to life-threatening situations (Xu, Blais, Cruz & Tannahill, 2024). This increased exposure amplifies the risk of developing PTSD symptoms. Conversely, although Nigerian female soldiers increasingly participate in frontline duties, their operational roles may differ, potentially involving less intense or less frequent direct combat exposure, which could account for their comparatively lower PTSD scores (Adebayo & Yusuf, 2022). However, it is important to note that the evolving role of women in military operations necessitates continuous monitoring of these trends as increased frontline integration may alter future prevalence rates.

Some research on Prolonged Exposure therapy (PE) for PTSD generally supports a reciprocal relation between PTSD and depressive symptoms, although this work showed stronger evidence that reductions in PTSD symptoms led to subsequent reductions in depressive symptoms compared to the other direction (Brown et al., 2018; Peskin et al., 2019). However, a series of randomized control trials examining both PE and Cognitive Processing Therapy in military samples suggested that reductions in depressive symptoms may precede changes in PTSD symptoms (Bryan et al., 2024). Longitudinal designs are needed to examine whether reductions in apathy, in

particular, would lead to reductions in other symptoms in the PTSD symptom network.

The current study also explored sex differences in PTSD symptoms among male and female soldiers. By applying a network approach, this study sought to understand the interconnections of PTSD symptoms to shed light on the potential sex differences in PTSD symptoms following MSA. Consistent with prior studies (e.g., Sexton et al., 2017; Tannahill et al., 2021), *t*-tests revealed comparable overall severity of PTSD symptoms among female and male soldiers. When comparing the network structures of PTSD symptoms between males and females, no statistically significant differences were found. Our results are congruent with previous PTSD symptom network studies examining sex differences (Armour et al., 2017; Birkeland et al., 2017; Gay et al., 2020), demonstrating that the symptom network structure of PTSD may be similar across sexes. Specifically, Gay et al. (2020) examined sex differences among a sample of natural disaster and accident victims, Armour et al. (2017) utilized a sample of US veterans, whereas Birkeland et al. (2017) recruited a sample of bombing victims, all of which observed that structures were similar. These differences can influence self-report measures of PTSD, potentially explaining variation in mean scores between genders. Moreover, cultural expectations and gender norms within the Nigerian military context may influence symptom reporting, where males might be more inclined to acknowledge combat-related distress due to differing perceptions of masculinity and vulnerability compared to females (Eze & Nwosu, 2021).

Sociocultural factors further complicate the understanding of gender disparities in combat-related PTSD. Nigerian society, with its distinct gender roles and expectations, can affect how male and female soldiers perceive and cope with trauma. Stigma surrounding mental health remains a significant barrier to help-seeking, particularly among men who may fear appearing weak or unfit for duty (Okafor et al., 2020). This stigma could paradoxically result in

higher reported PTSD symptoms among male soldiers when anonymity is assured in research settings, as they may feel more liberated to disclose psychological distress. Conversely, female soldiers might underreport symptoms due to concerns about career implications or societal judgment, thereby influencing observed differences in PTSD prevalence and severity (Ogunleye & Adeoye, 2023).

Relevance of Jones and Barlow's (1990) Anxious Apprehension theory

Jones and Barlow's (1990) Anxious Apprehension theory provides a nuanced psychological framework that is instrumental in understanding the complex manifestations of post-traumatic stress disorder (PTSD) among frontline military personnel. This study seeks to relate this theory to the discourse on combat exposure PTSD, focusing on recent empirical findings regarding age and gender differences among Nigerian Army personnel. By integrating theoretical insights with contemporary research, the authors argue that Jones and Barlow's conceptualization of anxious apprehension offers a critical lens for interpreting differential PTSD outcomes in this demographic, thereby informing more tailored and effective clinical interventions.

Jones and Barlow's Anxious Apprehension theory conceptualizes anxiety as a cognitive-affective state characterized by worry and heightened vigilance, particularly in response to perceived threats or stressors (Jones & Barlow, 1990). Central to this theory is the distinction between anxious apprehension and anxious arousal, with the former involving future-oriented cognitive processes that exacerbate emotional distress. In the context of PTSD, especially among combat-exposed soldiers, anxious apprehension manifests as a persistent preoccupation with potential dangers, intrusive thoughts about traumatic events, and elevated anticipatory anxiety. This framework elucidates why certain individuals experience chronic PTSD symptoms

following combat exposure: their cognitive style predisposes them to sustained anxious rumination and hypervigilance, which perpetuate distress even after the immediate threat has subsided.

Recent research on Nigerian Army personnel corroborates the relevance of anxious apprehension in understanding PTSD symptomatology, particularly when considering age and gender variables. A study by Okeke et al. (2022) examined frontline soldiers engaged in counter-insurgency operations in northeastern Nigeria, revealing that younger soldiers had significantly higher PTSD prevalence compared to their older counterparts. This aligns with Jones and Barlow's theory insofar as younger soldiers may possess less developed cognitive coping mechanisms, rendering them more susceptible to anxious apprehension and its resultant psychological sequelae. Moreover, the study highlighted that younger soldiers demonstrated increased worry and anticipatory anxiety about future combat encounters, consistent with the theory's emphasis on future-oriented cognitive processes.

Gender differences further complicate the PTSD landscape among Nigerian Army personnel. Despite the predominance of males in combat roles, emerging research indicates that female soldiers exhibit distinct PTSD profiles influenced by both biological and psychosocial factors. A recent investigation by Musa et al. (2023) found that female frontline soldiers reported higher levels of anxious apprehension-related symptoms, including intrusive thoughts and hypervigilance, compared to male soldiers with similar combat exposure. This phenomenon may be attributable to gender-specific stress appraisal and coping styles, as well as differential social support systems. Jones and Barlow's theory elucidates these findings by positing that anxious apprehension is modulated by individual differences in cognitive processing and emotional regulation, which are often gender-influenced (Barlow, 2014). The heightened cognitive focus on threat anticipation among females, as per the theory, could explain their increased vulnerability to combat-related PTSD.

Furthermore, the interplay between age and gender in the Nigerian military context underscores the multifaceted nature of PTSD risk factors. Younger female soldiers, for instance, may experience compounded anxious apprehension due to intersecting vulnerabilities—developmental immaturity and gendered stressors such as stigma and discrimination within military hierarchies (Adamu & Ibrahim, 2021). This intersectionality resonates with Jones and Barlow's theoretical framework, which highlights how anxious apprehension is not a uniform construct but is influenced by contextual and individual differences. Recognizing these layered influences is imperative for developing nuanced PTSD interventions that address the specific cognitive-emotional patterns of diverse soldier subgroups.

Applying Jones and Barlow's Anxious Apprehension theory theoretical framework to combat exposure PTSD among Nigerian Army personnel reveals important age and gender-related distinctions. From the perspective of anxious apprehension, this difference might be linked to age and gender-specific cognitive and emotional processing styles. Research indicates that men and women often differ in their patterns of worry and emotional regulation, with men tending to engage more in externalizing behaviors and women in internalizing strategies, which could influence the manifestation and reporting of PTSD symptoms (Tolin & Foa, 2006; Olff, 2017).

Moreover, the societal and cultural context of Nigerian military service potentially amplifies these gender differences. Male soldiers are traditionally expected to embody stoicism and resilience, yet they may experience greater cognitive dissonance when confronted with trauma, leading to heightened anxious apprehension as they internally struggle to reconcile their experiences with societal expectations (Nwokike & Uwakwe, 2019). Conversely, female soldiers, while increasingly integral to frontline operations, may access more social support networks or engage in different cognitive coping mechanisms, which might

mitigate the intensity of anxious apprehension and subsequent PTSD symptoms (Campbell et al., 2020). These gender-specific pathways align with the Anxious Apprehension theory's emphasis on cognitive patterns maintaining anxiety and PTSD, suggesting that interventions tailored to these differences could enhance treatment efficacy.

Implications for Military Health and Policy

The statistically significantly higher combat exposure PTSD among younger Nigerian soldiers has critical implications for military health services and policy. Given that increased combat exposure PTSD is associated with a greater risk of psychological disorders, younger personnel may require more intensive mental health screening and support mechanisms during and after deployment (Hoge et al., 2016). Early identification and intervention can mitigate the long-term psychological consequences of combat-related stress.

Additionally, military training programs might incorporate resilience-building and stress-management training tailored to younger soldiers, who are more likely to experience intense combat. These efforts could enhance operational readiness and reduce attrition due to psychological injury (Cornum, Matthews, & Seligman, 2011). Furthermore, understanding age-related exposure patterns can inform rotation schedules and deployment policies to balance combat exposure and PTSD more equitably, thereby distributing the psychological burden across age groups.

The practical implications of these findings are multifaceted. First, the elevated combat exposure PTSD among males may correlate with differential mental health outcomes between genders. Combat exposure PTSD is a well-established risk factor for post-traumatic stress disorder (PTSD), depression, and other psychological conditions. If male personnel are experiencing higher levels of combat stressors, they may be at greater risk for adverse mental health outcomes, necessitating targeted interventions.

The findings underscore the need for continued research that incorporates diverse measures of combat exposure PTSD, explores psychosocial outcomes, and accounts for the evolving roles of women in the military. By situating this study within the broader literature, it becomes evident that understanding gender differences in combat exposure PTSD is vital for fostering inclusive and effective armed forces that adequately support all personnel.

Limitations and Directions for Future Research

As the findings provide valuable insights, several limitations merit consideration. Because the study is cross-sectional, it is not possible to determine the causal relationship between factors such as gender, age, and combat experience. In order to investigate changes in combat exposure, PTSD, and related outcomes, there is an urgent need for longitudinal studies in which samples are followed up across military careers. Furthermore, this analysis with limited results failed to address rank, MOS, and deployment time as possible confounders in terms of combat exposure, PTSD, and age.

It is also recommended for future studies to utilize methodological practices that permit the examination of these characteristics more effectively, along with researching the role that characteristics of combat exposure PTSD might play as mediators and moderators of age effects. The subjective experience of combat by age can be operationalized through qualitative research. In addition, national and army gender norms. The future research agenda should also aim to conduct comparative studies across services and countries to confirm the observation about military over time.

Conclusion

In a bid to prevent Post-Traumatic Stress Disorder in combat veterans, this paper sets out to determine their combat experience, with the

main focus being on the assessment of combat experience in wartime service in the Nigerian Army. The results of the study indicate that the prevalence of combat exposure PTSD among military personnel is high and varies significantly based on the age and sex of a person. Tasked with regularly engaging in war and its various forms of ambivalent objection, the younger segment of the military is in more direct combat, serving in battalions and fighting. In most cases, women were given images of helpless hostages. However, the above data shows that these trends are changing as combat women become more active and exposed to combat situations. No wonder, in many respects, women exhibit high risk exposure in the armed military programs compared to men. Addressing these issues is essential to developing measures focused on patients' mental well-being. Each of these areas should be further researched, especially given the current changes in the overall content and profiles of the armed forces.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. There is a need to strengthen mental health services within military formations to provide counselling and trauma management support.
2. Frontline personnel should undergo periodic psychological assessments to identify early signs of PTSD and other stress-related disorders.
3. Soldiers should receive structured psychological preparation before deployment and rehabilitation counselling after missions.
4. Training programs should be organized to equip military counsellors and psychologists with advanced trauma management skills.
5. The Nigerian Army should develop comprehensive policies aimed at

addressing combat-related psychological stress among personnel.

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