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EXPOSURE TO COMBAT STRESS AND PSYCHOACTIVE SUBSTANCE USE AMONG NIGERIAN MILITARY PERSONNEL

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ABSTRACT

This study examined the relationship between exposure to combat stress and psychoactive substance use among military personnel. 450 military personnel with combat operational experience in Mongunu (Borno state) were drawn through convenience sampling technique. Findings of the study revealed a significant relationship between combat stress and use of psychoactive substances.A significant relationship between duration of serving the Nigerian army and combat stress was also found. Furthermore, a significant relationship between gender and combat stress was found. However, a significant relationship between rank and use of psychoactive substances was not found. Thus, the researchers conclude that, there is the presence of combat stress and use of psychoactive substances among Nigerian military personnel. Therefore, there is need for military personnel returning from combat to go through some form of psychological assessment and possible intervention through psychotherapy and counselling.

KEY WORDS:

combat stress, psychoactive, substance, abuse, Nigerian, military personnel

Introduction

Recently, violence has been visible in many parts of Nigeria. This has seemingly led to the destruction of lives and properties. The activities of Boko Haram, Niger Delta Avengers, Kidnapers, Herdsmen/farmers clash, and other armed groups within the country have led to the involvement of the military and other security agencies, mostly in a fierce battle between the security agencies and the perpetrators. Histories of other battles gone into across the globe between military forces and perpetrators in peace keeping situations have likely yielded some level of distress on the security personnel. Leskin, (2015) reported that military service members sent to war are often faced with life-threatening events and situations in which they must survive in some of the most dangerous environments or circumstance. These experiences include among others witnessing the death of others, armed combat, experiencing death and other forms of threats. Spiro,

Schnurr and Aldwin (1994) found a significant relationship between combat exposure and posttraumatic stress disorder (PTSD) symptom among soldiers after World War II. The WW II veterans exposed to moderate or heavy combat had 13.3 times greater risk of PTSD symptoms measured 45 years later, compared with noncombat veterans.

Recently, Osório, Jones, Jones, Robbins, Wessely and Greenberg (2017) suggest that categories of combat experience differentially impact on PTSD symptom. No wonder, Riddle, Sanders, Jones, and Webb (2006) *in a study in Afghanistan, argued the need for military combatants to be subjected to mental health intervention after a tough warfare.* Vogt, Vaughn, Glickman, Schultz, Drainoni, Elwy, and Eisen (2011) found that women reported slightly less exposure than men to most combat-related stressors, but higher exposure to other stressors (i.e., prior life stress, deployment, and sexual harassment).

Substance abuse has been found as part of the effects of exposure to the theatre of war among military personnel. Robin, Helzer, and Davis, (1975) reported that, approximately 20 percent of Vietnam War veterans reported having used narcotics (heroin, opium), on a weekly basis, and 20 percent also were considered to be addicted based on reported symptoms of dependence. Similar to drug use, heavy drinking in the military has been an accepted custom and tradition (Bryant & Schuckit, 2008).

Misuse of substances among military personnel, were widespread particularly at the time of the Second World War. Davidson and Neale, (1996), further revealed that drugs were administered to soldiers during the Second World War to reduce fatigue. Nevertheless, Mottram as cited in David (2012) stated that ancient soldiers used stimulants to enhance their physical performance, describing the use of caffeine and alcohol by soldiers between the middle of the nineteenth century and advent of the Second World War. Ibanga, Adetula, Dagona, Karick, and Ojiji, (2005) had earlier found that alcohol is one of the most available psychoactive substances in the country, and it is consumed either in the form of traditional beverages (e.g., *burukutu, pito*, *emu funfun,* palm-wine, *ogogoro*), or as western lager beer, wine or spirituous liquors (e.g., brandy, whisky and gin). The researchers in this present study are of the view that the prevalence of substance use among military personnel could be associated with the creation of mammy market in the army barracks and its availability just as Ibanga et al (2005) had reported. Ikpeama, Ikpeama, Ikpeama, and Uchechi (2017) reported that, the mammy market in Sokoto is widely known as a place where people come to drink local alcoholic beverages such as Burukutu, Ogogoro and Omole. Other national and international drinks like Beer, Whisky, and Star lager brand, Guinness Stout and others.

Literature Review

In Nigeria, Maccido (2015) found that, alcohol and marijuana were the psychoactive substances that are commonly used by military personnel in Kaduna State. In a large-scale survey, Bray and Hourani (2007) found that the prevalence of frequent heavy drinking in the military from 1980 through 2005 ranged from 15 to 20 percent. Ames and Cunradi (2004) reported that in addition to demographic factors, military-related stressful events also may contribute to the high rates of problem drinking.

Stahre, Brewer, Fonesca, and Naimi, (2009) found that military rank significantly correlated with frequent heavy drinking; rates were six times greater among enlisted personnel with the lowest rankings compared with officers. Rates of heavy drinking also varied as a function of military service branch, with those in the Army, Navy, and Marines being more likely to report frequent heavy drinking than those in the Air Force. Other population- based studies of the U.S. military have found that heavy drinking is more likely to occur among younger military members. Similarly, Fear, Iversen, Meltzer, Workman, Hull, Greenberg, Barker, Browne, Earnshaw, Horn, Jones, Murphy, Rona, Hotopf and Wessely, (2007) found that, in both sexes, for all ages, the military have a higher prevalence of hazardous drinking. Binge drinking was associated with being younger, being in the Army, being single, being a smoker and being white. Among military men, heavy drinking was associated with holding a lower rank, being younger, being single, being in the Naval Service or Army, being deployed to Iraq, not having children, being a smoker, having a combat role and having a parent with a drink or drug problem.

Use of performance-enhancing supplements is widespread among younger generations of military personnel (Jacobson, Horton, & Smith, 2012). A department of defense survey of 28,546 military personnel reported an estimated prevalence of prescription stimulant misuse of 2.3% (Jeffery, Babeu, & Nelson, 2008). Studies have suggested that young single males and those who have undergone particularly stressful experiences are at greatest risk of misusing alcohol. These associations were observed in the aftermath of conflicts in Iraq and Afghanistan (Jones & Fear, 2011).

In a study to investigate the relationship between alcohol consumption and stress among Indian Army, Nagle, Rani, Indubala, and Pradhan, (2009), found that, the associations between alcohol use and the potential stress in military life were consistent and often large in magnitude. Heavy alcohol intake is a significant problem in the military setup. Personnel often use alcohol as a measure to cope with stress, boredom, loneliness, and lack of other recreational activities.

Exposure to combat comes with many health and physical challenges that threaten the health and well-being of Military personnel at the theatre of war and or after deployment in peace keeping operations. Pavlina, Komar and Filjak, (2000) states that, *combat stress denotes the onset of psychological, physical and behavioural reactions brought about by the exposure to traumatic experiences in the battlefield.* Most soldiers, however, recover from shock quickly and successfully but a smaller portion that failed to recover will develop combat stress. Boscarino, (1981) found that combat veterans exhibited substantially higher levels of binge drinking than the matched controls. In relation to PTSD, Okulate and Jones (2006) found that, PTSD was significantly associated with long duration of stay in mission area, current alcohol use, lifetime use of an alcohol/gunpowder mixture, and lifetime cannabis use. Survivor guilt was significantly associated with avoidance of trauma-related stimuli but not duration of combat exposure.

Theoretical Review

Combat Stress Reaction and the General Adaptation Syndrome; This model defines stress as any non-specific demand on a person's body that disturbs the body's homeostatic state or equilibrium. The source of the stress comes from the various environmental pressures and, when the stressors are chronic enough, depletes the body's energy reserves, which results in the various health repercussions (Rice. 1999). Combat stress reaction is generally the term used to describe the short-term effects of combat stress. In many cases, soldiers experiencing combat stress reaction during war will often develop a further disorder upon returning home known as posttraumatic stress disorder. Combat stress reaction is experienced during the stressful situation which can stem into the next level with time as posttraumatic stress disorder (Solomon, Waysman, Belkin, Levy, Mikulincer and Enoch. 1992).

Serious stress environments, such as military combat experienced by soldiers, can cause not only serious physiological repercussions but also psychological illnesses. A common psychological illness that many soldiers experience after intense stress is combat stress reaction. Combat stress reaction, sometimes referred to as shell shock or battle fatigue, is a term used to describe the various physical and psychological effects that overwhelm a soldier and reduce combat efficiency after an intense period of stress often experienced in military theatre (Gunshow, 2012).

Biological perspective of psychoactive substance indicate that the risk of alcohol dependence runs in families (Reich, Edenberg, Goate, Williams, Rice, Van Eerdewegh, Foroud, Hesselbrock, Schuckit, Bucholz, Poresz, Li, Conneally, Nurnberger, Tischfield, Crowe, Cloninger, Wu, Shears, Carr, Crose, Willig & Begleiter, 1998). Family studies show that the relatives of those who abuse substances are at increased risk for abusing many substances (Bierut, Dinwiddie, Begleiter, Crowe & Hesselbrock, 1998).

Stronger evidence for a genetic diathesis comes from twin studies, which have revealed greater concordance in identical twins than in fraternal twins for drug abuse in general (Tsuang, Lyons, Meyer, Doyle, & Eisen 1998). However, Theorist working within the socio-cultural perspective regards stressors within the family, community, and culture as factors that when combined with genetic vulnerability lead the individual to develop alcohol dependence (Halgin & Whitbourne, 2000).

Statement of the problem

At present in Nigeria, Boko Haram insurgency/terrorism, have exposed many military personnel and other security agencies to combat stress, in the theatre of war, some of these military personnel are physically wounded, some are diagnosed with some level of trauma and later PTSD, some have been seen to be in high level of distress; this seeming distress and many more are often not attended to immediately. Some of the army personnel whether physically injured or not may resort to substance use and abuse in other to help mask these symptoms and trauma they face in the theatre of war. Throughout the country with the advent of Boko Haram insurgency/terrorism, the Nigerian military receives much public interest and media attention.

In spite of observed PTSD and associated problems no one seems to explain why those in the military continued to engage in the use/abuse of psychoactive substances. Studies that aimed to evaluate existing prevention efforts, including psycho-education on the dangers of use/abuse of psychoactive substances, test, and policies around the country are scanty. Researchers in this study therefore are interested in understanding the influence of the exposure to combat stress on use/abuse of psychoactive substances among military personnel. The study is aimed at investigating the relationship between combat stress exposure and substance use among military combatants fighting insurgency in the North Eastern part of Nigeria.

Research questions

1. Will there be a significant relationship between combat stress and use of psychoactive substances among military personnel fighting insurgency?
2. Will rank and use of psychoactive substance have a significant relationship?
3. Will duration of serving the Nigerian army and combat stress among military personnel fighting insurgency have any significant relationship?
4. Will gender and combat stress have a significant relationship among Nigerian military personnel fighting insurgency?

Hypotheses

In view of the research problem and questions, the following hypotheses were tested:

1. There will be a significant relationship between combat stress and use of psychoactive substances among military personnel fighting insurgency.
2. There will be a significant relationship between rank and use of psychoactive substances
3. There will be a significant relationship between duration of serving the Nigerian army and combat stress among military personnel fighting insurgency.
4. Gender and combat stress will have a significant relationship among Nigerian military personnel fighting insurgency.

Methodology Procedure

Questionnaires were administered to military personnel with combat operational experience within Headquarters of 8Task Force Division Nigerian Army, Kinnasara Cantonment Barracks Mongunu. Only those who agreed and were willing to participate in the study were given the questionnaires to fill. After two hours, 450 questionnaires were collected from the participants.

Measure

The 7- item Combat Exposure Scale (CES) developed by Keane, Fairbank, Caddell, Zimering, Taylor, and Mora (1989) was used for data collection in this study. The self-report measure assesses wartime stressors experienced by combatants. Items are rated on a 5-point frequency. The total CES score (ranging from 0 - 41) is calculated by using a sum of weighted scores, which can be classified into one of five categories of combat exposure ranging from “light” to “heavy.” The CES was developed to be easily administered and scored and is useful in both research and clinical settings (U.S. Department of Veterans affairs, 2016). The mean score on the Combat Exposure Scale was 25.57 *(SD* = 10.12); Coefficient alpha was calculated and yielded a value of .85, the average correlation was .75; A principal-components analysis using varimax rotation generated a single factor with an eigenvalue greater than 1.0. Test-retest reliability with a *1-week*interval was calculated, $r(29) = .97$, $p < .0001$. There were no between-group differences in the test-retest correlations. The means for Time I and Time 2 were 23.2 and 22.2, respectively, indicating excellent stability over this time period(Keane et al, 1989).

Participants

This survey research was carried out among Nigerian army personnel deployed in fighting Boko Haram insurgency/terrorism. Due to difficulty in getting the

military personnel in the theatre of war the same time convenience sampling technique was employed in selecting the participants of interest, the total of 450 (mean age 32.48, Std. Deviation 8.268) military personnel with combat operational experience in Mongunu (Borno state) were used for the study; the age range of participants was between 20 and 52. About 293 (65.1%) were 35 years and below while 157 (34.9%) were 36 years and above. Alcohol use had the highest prevalence of participants in terms of psychoactive substance with 235 (52.2%), followed by cigarette use with 90 (20.0%). Tramadol use came third highest in psychoactive substance abuse with 33 (7.3%) participants, followed by codeine use with 22 (4.9%), cannabis/marijuana was the fifth most abuse psychoactive substance with 12 (2.7%) participants, followed by rohypnol with 7 (1.6%), pentazocine 5 (1.1%), and cocaine use with 4 (0.1%) respectively. Skunk was the least psychoactive substance abused with only 1 (0.2%) participant. Only 41 (9.1%) of the participants were not using any psychoactive substance. Out of those that used psychoactive substances only 73 (16.2%) identified that their use of psychoactive substances was attributed to the nature of military work (exposure to combat) while 61 (13.6%) attributed their use of psychoactive substances to joining the Nigerian army.

More males 410 (91.1%) participated in this study than females 40 (8.9%). About 178 (36.6%) of the participants were wounded due to operations they were engaged in, 272 (60.4%) were not wounded. Majority of the participants 159 (35.3%) had light - moderate levels of exposure to combat stress, followed by 119 (26.4%) that had moderate level of exposure to combat stress, 96 (21.3%) had moderate - heavy level of exposure to combat stress. Sixty two (13.8%) had light level of exposure to combat stress, only 14 (3.1%) had heavy level of exposure to combat stress. About 271 (60.2%) of the participants were less than 10 years in service while 179 (39.8%) served 11 years and above. In terms of rank, majority 439 (97.6%) were other rank compared to only 11 (2.4%) officers.

Research Design/Data analysis

Correlational survey design using questionnaires to indicate relationship between combat exposure stress and abuse of psychoactive substances among military personnel was adopted in this study. Descriptive and inferential statistics (chi-square) were used in analysing data in this study. Data was analysed using alpha levels of 0.05**.**

Result

Table 1: Chi-square table on exposure to combat stress and use of psychoactive substances

Total CES	Psychoactive substances of abuse*										Total	÷2	df	P
	0	1	2	3	4	5	6	7	8	9				
Light CES	3	38	10	5	2	3	0	0	0	1	62			
Light-Moderate CES	11	92	32	12	1	7	2	0	1	1	159			
Moderate CES	18	44	32	3	8	9	0	2	0	3	119	65.433	36	0.002
Moderate-Heavy CES	6	53	16	11	1	3	4	2	0	0	96			
Heavy CES	3	8	0	2	0	0	1	0	0	0	14			
Total	41	235	90	33	12	22	7	4	1	5	450			

*Key: 0 = non substance users, 1 = Alcohol, 2 = Cigarette, 3 = Tramadol, 4 = Cannabis/Marijuana, 5 = Codeine, 6 = Rohypnol, 7 = Cocaine 8 = Skunk, 9 = Pentazocine

Figures on table 1 examine the relationship between exposure to combat stress and use of psychoactive substances. Result showed that there was a significant relationship between exposure to combat stress and use of psychoactive substances,÷2 (36, N = 450) = 65.433, p = 0.002 (p< .05); with most of those that had light-moderate exposure to combat stress using alcohol.

Table 2: Chi-square table on use of substance based on rank

Rank category		Psychoactive substances of abuse*										Total	÷2	df	P
		0	1	2	3	4	5	6	7	8	9				
Other rank	40	230	85	33	12	22	7	4	1	5	439				
												5.857	9	.754	
Officers	1	5	5	0	0	0	0	0	0	0	11				
Total	41	235	90	33	12	22	7	4	1	5	450				

*Key: 0 = non substance users, 1 = Alcohol, 2 = Cigarette, 3 = Tramadol, 4 = Cannabis/Marijuana, 5 = Codeine, 6 = Rohypnol, 7 = Cocaine 8 = Skunk, 9 = Pentazocine

Result of table 2 did not show any significant relationship between rank and use of psychoactive substances, ÷2 (9, N = 450) = 5.857, p = 0.754 (> .05)

Table 3: Chi-square table on duration of serving the Nigerian army and combat stress

		Duration of Serving the Nigerian Army		Total	÷2	df	P
		= 10 years	= 11 years				
Total CES Score Range	Light CES	45	17	62			
	Light-Moderate CES	101	58	159			
	Moderate CES	71	48	119			
					10.815	4	.029
	Moderate-Heavy CES	46	50	96			
	Heavy CES	8	6	14			
Total		271	179	450			

Result of table 3 showed that there is a significant relationship between duration of serving the Nigerian army and combat stress, ÷2 (4, N = 450) = 10.815, p = 0.029 (p < .05); with majority of those serving the Nigerian army 10 years and below predisposed more to combat stress.

Table 4: Chi-square table on gender and combat stress

		Gender		Total	÷2	Df	P
		Male	Female				
Total CES Score Range	Light CES	52	10	62			
	Light-Moderate CES	145	14	159			
	Moderate CES	105	14	119			
					12.086	4	.017
	Moderate-Heavy CES	94	2	96			
	Heavy CES	14	0	14			
Total		410	40	450			

Result of table 4 revealed a significant relationship between gender and combat stress among Nigerian military personnel fighting insurgency, ÷2 (4, N = 450) = 12.086, p = 0.017 (p < .05); with more males predisposed to combat stress.

Discussion

Findings of this study revealed a significant relationship between exposure to combat stress and use of psychoactive substances, with most of the military personnel that had light-moderate level of exposure to combat stress using alcohol. This implies that being military personnel with light-moderate level of combat stress predisposes one to the use of alcohol. Similarly, Nagle, et al (2009) reported that military personnel who take alcohol specifically to reduce stress reported significantly higher stress level than those who do not consume alcohol. Result of the second hypothesis did not show any significant relationship between rank and use of psychoactive substances. This implies that rank does not predispose military personnel to the use of psychoactive substances. However, contrary to finding of this study, Fear et al (2007) reported that binge drinking is associated with lower rank, being a smoker, and having a combat role. Similarly, Stahre, et al (2009) found that military rank significantly correlated with frequent heavy drinking; and greater among enlisted personnel with the lowest rankings compared with officers.

In relation to use of psychoactive substances socio-cultural perspective had linked alcohol dependence with stressors within community (Halgin et al 2000). Result of the descriptive statistics is in agreement with socio-cultural perspective, 73 (16.2%) of the participants in this study identified that their use of psychoactive substances was attributed to the nature of military work (exposure to combat) while 61 (13.6%) attributed their use of psychoactive substances to joining the

Nigerian army. However, only 41 (9.1%) of the participants that participated in this study were not using substance of any type.

Result of the third hypothesis revealed a significant relationship between duration of serving the Nigerian army and combat stress; with majority of those serving the Nigerian army 10 years and below predisposed more to combat stress. This implies that duration of serving the Nigerian army is a predisposing factor to the development of combat stress. Though, in relation to PTSD, Okulate et al (2006) found that, PTSD was significantly associated with long duration of stay in mission area, current alcohol use, lifetime use of an alcohol/gunpowder mixture, and lifetime cannabis use.

Result of the fourth hypothesis revealed a significant relationship between gender and combat stress among Nigerian military personnel fighting insurgency; with more males predisposed to combat stress. This implies that being a male combatant predispose one to combat stress. This finding is in line with earlier study by Vogt, et al (2011) women reported slightly less exposure than men to most combat-related stressors.

Findings of the third and fourth hypotheses are in line with combat stress reaction and the general adaptation syndrome theory. Combat stress reaction being the short-term effects of war and being experienced during stressful situation stem into posttraumatic stress disorder with time (Solomon, et al 1992).Also, Gunshow (2012)states that serious stress environment, such as military combat experienced by soldiers can cause physiological and psychological illness. Thus, Nigerian military personnel in theatre of war in Mongunu Borno state are predispose to stress environment which is combat related. This is an indication that most Nigerian military personnel in the theatre of war may come down with PTSD years after combat operation.

Conclusion

As a result of the discoveries made through this study, there is need for certain interventions to be in place in the life of military personnel. Combat exposure is the most likely expectation in this profession, thus, military personnel that have been in the theatre of war for long should be redeployed. Furthermore, substance use was seen to be significant which is likely to be an upshot of distress and in some cases, or likely to be ways of managing distress. There is need for military personnel returning from combat to go through some form of psychological assessment and possible intervention through psychotherapy and counselling where necessary. Lastly, it is recommended that deliberate steps should be taken to ensure that adequate time for rest and rehabilitation is introduced to help these men and women, possibly before retirement, so that their physical and mental health are not over burdened as they aged, considering the presence of combat stress and use of psychoactive substances among participants of interest.

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