Global Journal of human-social science: a
Arts & Humanities - Psychology
Volume 14 Issue 3 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-460x & Print ISSN: 0975-587X

Depression and Paranoid Ideation as Correlates of Substance Abuse Among Nigerian Military Personnel Deployed for United Nations Peace Support Operation

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GJHSS-A Classification : FOR Code : 730205, 920414

Strictly as per the compliance and regulations of:

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I. Background

Substance use related disorders have serious consequences on self and others. Substance uses, particularly the use of illicit drugs, injecting drug use or alcohol bingeing are associated with high rates of mortality and morbidity. Injecting drug users carry the risk of overdose leading to respiratory depression, seizures and death. There is a heightened risk of infection from both injecting drug use and unprotected sexual contact to HIV, Hepatitis B & C and other conditions. Alcohol intoxication is associated with violence. Substance abuse, in particular alcohol, tobacco and cannabis abuse, are among the most critical adverse impacts of military service. They are related to many negative behaviors and impedes the veteran's ability to resolve issues such as trauma and successfully reintegrate into their families, retain employment, and maintain stable housing. Military personnel have a drinking rate of 16.1%, which is higher than the civilian rate of 12.9% (RTi international, 2006).

Acute intoxication with cannabis can produce altered sensorium, disinhibition, paranoid ideation, mood changes and hallucinatory experiences. Cocaine and stimulants like amphetamines can also produce acute behavioural changes. Inhalants cause severe organ damage and can seriously affect the brain. Of all individuals with a lifetime diagnosis of schizophrenia (1.5% of the U.S. population), 47.3% met criteria for some form of substance abuse. Rates of substance abuse among individuals with bipolar disorder are several times higher than in those with unipolar depression. A prevalence study of depression in Southwest Nigeria reported a prevalence of 12.6%, which is at the upper end of the globally reported range.

Military families face unique stressors associated with deployment and reintegration during deployment, families are faced with worries about the safety of the service member, a need to adapt to changing situations and increased responsibilities. When war fighters return, often recovering from physical and psychological injuries, the challenge of reintegrating into family life, reconnecting to social supports, finding civilian employment and redefining their roles in the community can be overwhelming. Combat-related difficulties, such as Traumatic Brain Injury (TBI) and Post-Traumatic Stress Disorder (PTSD), the signature injuries of Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF), have a significant impact on returning war veterans and their family relationships. The presence of TBI and PTSD increase the likelihood of other emotional problems (American Psychological Association [APA], 2007) and substance abuse, which increase family stress and the risk of intimate partner violence.

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor

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concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide. Almost 1 million lives are lost yearly due to suicide, which translates to 3000 suicide deaths every day. For every person who completes a suicide, 20 or more may attempt to end his or her life (WHO, 2012).

Despite evidence that the prevalence of psychotic symptoms and paranoid ideation in older community-dwelling adults is not uncommon—i.e., rates of up to 10% have been reported, depending on sample characteristics and selection criteria, data in the United States have been limited to three studies in the past 20 years, all of which focused exclusively on paranoid ideation. Two were general community studies conducted in rural and urban areas in North Carolina, and the third involved a sample of African Americans recruited from senior centers in New Orleans. This paucity of data is unfortunate since psychotic and paranoid symptoms in older persons without cognitive impairment have been linked to the development of dementia, higher mortality, substance abuse, impaired functional ability, depression, visual and hearing impairments, and poor physical health. In the United States, among all age groups, racial differences in paranoid symptoms have been noted, with blacks having a significantly greater prevalence than whites. This finding takes on added clinical importance because older blacks are among the most rapidly expanding population subgroups.

Reciprocal relations may exist among depression, paranoid ideation, and drug use. First, military personnel may self-medicate depression through drug use, and drug use may increase vulnerability to depression by exerting neuro physiological or behavioral changes on the user: 9.0–47.9% of persons exhibit comorbid depression and drug use (O'Neil, Conner, & Kendall, 2011). Second, paranoid ideation and drug use may follow a common psychosocial pattern of externalizing behavior: an externalizing factor accounts for 79% and 95% of paranoid and drug use, respectively (Measelle, Slice, & Hogansen, 2006). Third, a reciprocal association may exist between paranoid ideation and depression (Johnson, Cohen, Kasen, & Brook, 2005), mediated by disrupted interpersonal functioning, and social rejection by prosocial peers: 22.7–83.3% of those with depression may also meet criteria for paranoid ideation, while 8.5–45.4% of those with conduct disorder also met criteria for depression (Angold & Costello, 1993). A study undertaken from 1993 to 1998 of comorbid psychiatric illness and substance misuse estimated that there were at least 195,000 comorbid service users and 3.5 million GP consultations involving comorbid service users of all ages in England and Wales (Fisher et al, 2004).

The relatively high rates of comorbidity among depression, paranoid ideation, and drug use, and the scarcity of longitudinal, population-based studies on the relations among the three symptom domains under score the importance of research on comorbidity among depression, paranoid ideation, and drug use. Nigerian Army pattern of illicit drug use have contributed to the comorbidity of mental health and addictive disorders in the Nigeria Armed Forces. The goal of this study is to assess the relationship among depression, paranoid ideation and substance abuse among military personnel deployed for peace support operation. Specifically, the objectives of the study are to:

i. Establish prevalence of substance abuse (alcohol, tobacco and cannabis)
ii. Discover if depression, paranoid ideation will have any relationship with substance abuse among Nigerian Army personnel deployed for Peace Support Operation.
iii. Prevalence of depression and paranoid ideation.

II. Method

Cross sectional design was adopted. The independent variables were depression and paranoid ideation. The dependent variable was substance abuse. The study was conducted in eleven Barracks in Nigeria. The barracks were in Badagry, Bama; Owerri, Benin, Akure, Agenebode, Ijebu-ode, Zuru, Owode, Maiduguri and Kotangora. Prospective participants met inclusion-exclusion criteria which include:

i. Currently serving Nigerian Army personnel.
ii. Nominated by Nigerian Army Headquarters for United Nations peace support operation in Sudan and Liberia and
iii. English literate.

A total of twenty two thousand and four hundred (n=22400) Nigerian Army Officers and soldiers earmarked for United Nations PSO between June 2010-July 2013 participated in the study. Out of which 21280(95%) were male while 1120(5%) were female. The mean age of the participants was 32.4years (SD±5.1).The study was conducted between June 2010- July 2013.

III. Instruments

Data was collected with the use of a 244-item self-report questionnaire and Multi-drug one step Multi-Line Screen Test Device (Urine). The questionnaire made up of three sections. The 9- item Section A was designed to tap information about respondents' socio-demographic characteristics. Such information included: gender, age, marital status, religion, number of children, educational background, and birth position.

Section B was a 126-item World Health Organization-Alcohol, Smoking and Substance

Involvement Screening Test (WHO ASSIST V 3.0, 2002). The instrument measured and rapid drug diagnostic test for in vitro diagnostic only for substance abuse. Re-validation yielded Cronbach alpha of 0 .75

Section C of the questionnaire developed by Derogatis LR, Lipman RS, Covi L(1973) had 90-item designed to obtain information on depression, paranoid ideation, somatization, obsessive and compulsive, interpersonal sensitivity, anxiety, and psychoticism (Symptoms Checklist(SCL-R- 90). The self-report Likert-type instrument has five graduated responses ranging from extremely to not at all. It had a reliability coefficient of .80; a re-validation yielded an alpha coefficient of .79. The instrument was validated in Nigeria by Omoluabi (1991).

a) Multi-drug one step Multi-Line Screen Test Device (Urine)

It is a rapid one step screening test for the simultaneous, qualitative detection of multiple drugs and drug metabolites in human urine at the following cut-off concentrations in urine:

Test	Calibrator	Cut-Off(Ng/Ml)
Amphetamine(AMP)	d-Amphetamine	1000
Amphetamine(AMP 500)	d-Amphetamine	500
Amphetamine(AMP 300)	d-Amphetamine	300
Barbiturates(BAR)	Secobarbital	300
Benzodiazepines(BZO)	Oxazepam	300
Benzodiazepines(BZO 200)	Oxazepam	200
Buprenorphine(BUP)	Buprenorphine	10
Cocaine(COC)	Benzoylecgonine	300
Cocaine(COC 150)	Benzoylecgonine	150
Marijuana	11-nor-^9-THC-9COON	50
Methadone(MTD)	Methadone	300
Methamphetamine(MET)	d-methamphetamine	1000
Methamphetamine(MET 500)	d-methamphetamine	500
Methamphetamine(MET 300)	d-methamphetamine	300
Methylenedioxymethamphetamine(MDMA)	D,I- Methylenedioxymethamphetamine	500
Morphine(MOP 300)	Morphine	300
Opiate(OPI 2000)	Morphine	2000
Oxycodone(OXY)	Oxycodone	100
Phencyclidine(PCP)	Phencyclidine	25
Propoxyphene(PPX)	Propoxyphene	300
Tricyclic Antidepressants(TCA)	Nortriptyline	1000

Multi-drug one step Multi-Line Screen Test Device (Urine) is an immunoassay based on the principle of competitive binding. Drugs which may be present in the urine specimen compete against their respective drug conjugate for binding sites on their specific antibody. During testing, a urine specimen migrates upward by capillary action. A drug, if present in the urine specimen below its cut-off concentration, will not saturate the binding sites of its specific antibody. The antibody will then react with the drug-protein conjugate and a visible colored line will show up in the test line region of the specific drug strip. The presence of drug above the cut-off concentration will saturate all the binding sites of the antibody. Therefore, the colour line will not form in the test line region. A drug-positive urine specimen will not generate a colored line in the specific test line region of the strip because of drug competition, while a drug- negative urine specimen will generate a line in the test line region because of the absence of drug competition. To serve as a procedural control, a colored line will always appear at the control line region, indicating that proper volume of specimen has been added and membrane wicking has occurred.

IV. Data Collection

The researchers obtained permission from the Nigerian Army Headquarters as it was part of medical screening for Military personnel deployed for United Nations peace support operation. The researchers discussed the purpose of the study to the participants and administered the questionnaires to them. They were allowed to read the questionnaire and respond accordingly. This took an average of 70 minutes. A total of twenty-two thousand and four hundred(n-22400) participated in the study. This was proceeded by one on one interview with each of the participants, where discrepancies were noticed between ASSIST response and drug abuse tell tales signs,Multi-drug one step Multi-Line Screen Test were conducted.All questionnaire were correctly and completely filled. Completed questionnaires were sorted, coded, and entered into the Statistical Package for Social Sciences for data analysis.

V. Results

Table 1 : Prevalence of substance abuse among Nigerian Army Peace Support Operation personnel 2010-2013

Category	No.	Percentage
Single drug	4060	18.1
Multiple drugs	1895	8.5
Non	16445	73.4
	22400	100

The table 1 showed that 4060(18.1%) abuse single drug, 1895(8.5%) abuse multiple drugs.

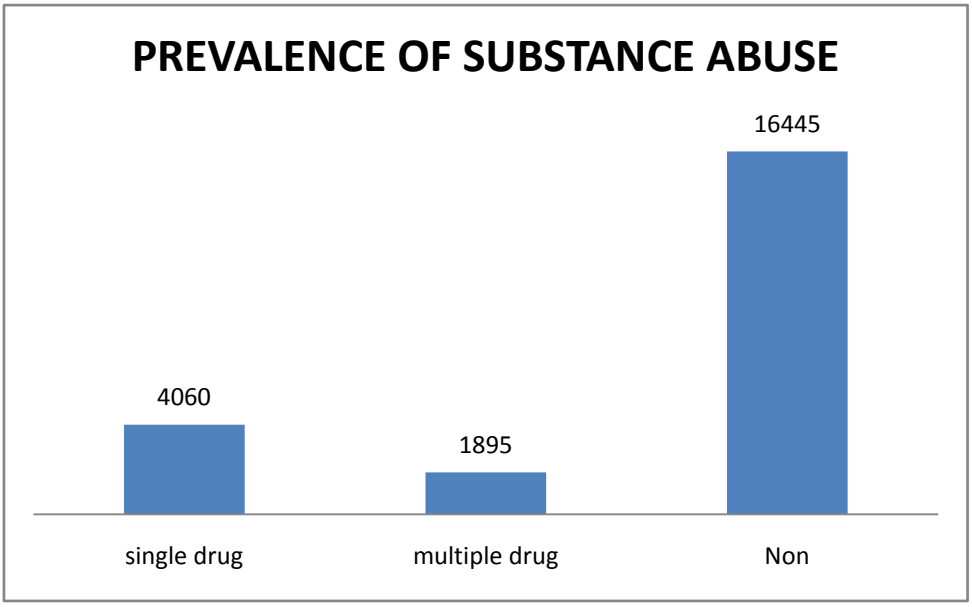

Table 2 : Substance Abuse Among Single Drug Users, 2010-2013

SUBSTANCE	FREQUENCY	PERCENTAGE
Cannabis	544	13.4
Alcohol	2233	55.1
Tobacco	1278	31.5
	4060	

Table 2 revealed that among single substance abusers;544 (13.4%) abuse cannabis,2233(55.1%) abuse alcohol while 1278(31.5%) abuse tobacco.

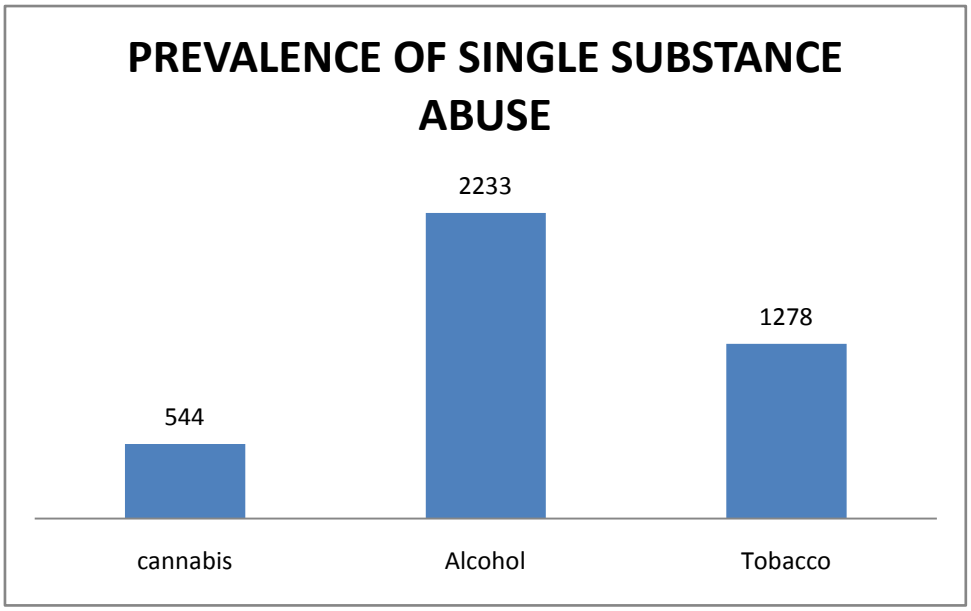

Table 3 : Multiple abuse combined 2-3 substances,2010-2013

Substances	Frequency	Percentage
Alcohol and cannabis	210	11.1
Alcohol and tobacco	1010	53.3
Tobacco and Cannabis	187	9.9
Alcohol, tobacco and cannabis	489	25.8
	1895	100

Table 3 showed that among multiple substance abusers, 210(11.1%) abuse alcohol and cannabis, 1010(53.3%) abuse alcohol and tobaccoo, 187(9.9%) abuse tobacco and cannabis while 489(25.8%) abuse alcohol, tobacco and cannabis.

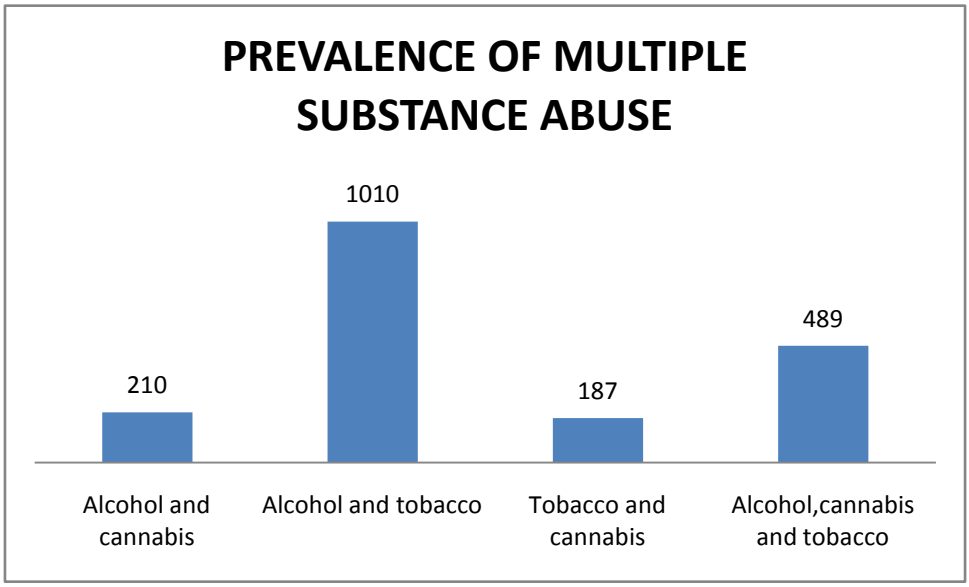

Table 4 : Prevalence of depression and paranoid ideation among Nigerian Army Peace Support Operation personnel

Psychopathology	Frequency	Percentage
Depression	2771	12.3
Paranoid ideation	2947	13.2
Non/Others	16682	74.4
	22400	

Table 4 revealed that 2771(12.3%) had symptoms of depression and 2947(13.2%) had symptoms of paranoid ideation.

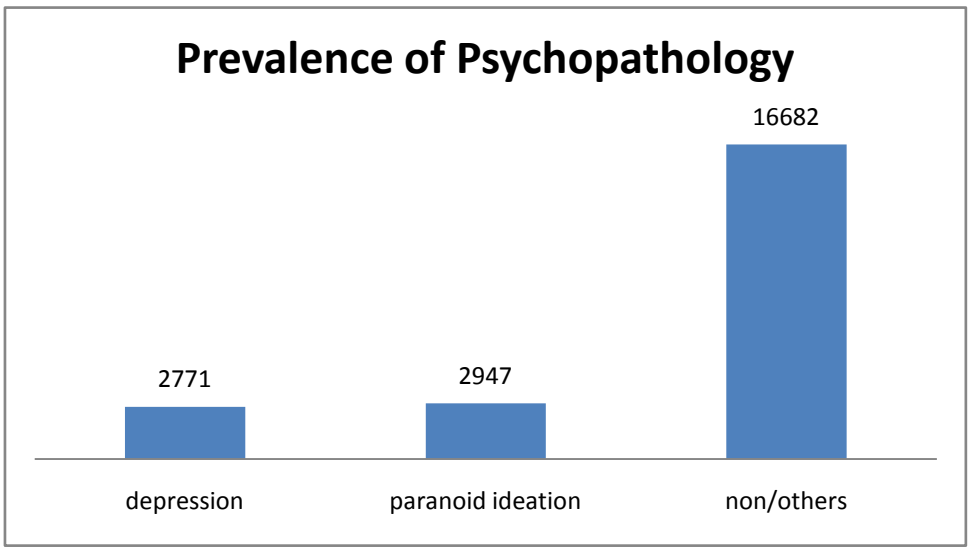

Table 5 : Mean, Standard Deviation, Pearson Product Moment Correlation of depression, paranoid ideation and substance abuse

	Mean	SD	1	2	3
Depression	44.5	12.3	---		
Paranoid ideation	33.5	9.5	**.69	---	
Substance abuse	43.2	11.3	**.71	**.65	----

**P<.05

Table 5 revealed that Depression had significant positive relationship with substance misuse (r=.71, P<.05). This means depression coefficient of determination (r^2=.50) on substance abuse was 50%.Paranoid ideation also had significant relationship with substance misuse among NA personnel (r=.65, P<.05). It implies that coefficient of determination of paranoid ideation on substance abuse was 42%.

Table 6 : Summary of multiple regression showing independent and joint prediction of depression and paranoid ideation on substance abuse

Independent effect						Joint effects			
Variables	**B**	**S.E.**	**β**	**T**	**P**	**R**	**R^2**	**Adj.R^2**	**P**
Depression	.105	.039	.653	2.74	<.05				
Paranoid ideation	-.104	.024	-.596	-3.45	<.05	.671	.450	.321	<.05

Table 6 shows that depression and paranoid ideation had significant independent and joint prediction on substance abuse (R^2=.450; F (2,22397) =5.15; P<.05). In term of independent effect, depression predicted substance abuse (β = .653, t = 2.74; P<.05).The variable accounted for 65.3 percent (β = 0.653) variance in substance abuse. Paranoid ideation also predicted substance abuse (β = .596, t = -3.45; P<.05).It accounted for 59.6% variance in substance abuse.

VI. Discussion

The result from the present study showed that 18.5% of Nigerian Army personnel abuse one of alcohol, cannabis and tobacco.8.5% abuse at least two of alcohol, cannabis and tobacco. 12.3% of troop deployed for peace support operation had depressive symptoms while 13.2% had paranoid ideation symptoms. Depression and paranoid ideation had significant positive relationship with substance abuse. Further analysis revealed that depression contributed up to 65.3% in substance abuse while paranoid ideation accounted for 59.6% variance in substance abuse.

In agreement with earlier findings (Bennett, Bellack, & Gearon, 2001)It is estimated that the lifetime prevalence of substance abuse among individuals with depression and schizophrenia is about 50% with 20-65% having current substance abuse. In the Epidemiologic Catchment Area Study (Regier et al., 1990), the lifetime prevalence of any Substance Use Disorder was 16.7% in the general population whereas the rate was 56% among individuals with bipolar disorder. Patients with substance abuse and severe mental illness have a poorer and more difficult treatment course than patients with single disorders (Dixon, 1999).

Also, in line with the National Comorbidity Study in the United State, a nationally representative population study, about 41-65% of participants with any lifetime substance use disorder also had a lifetime history of at least one mental health disorder (Kessler et al., 1996).The most common individual diagnosis was conduct disorder (29%), followed by major depression (27%), and social phobia (20%). Among those with a lifetime history of any mental disorder, 51% had a co-occurring addictive disorder, with those respondents with conduct disorder or adult antisocial personality having the highest prevalence of lifetime Substance Use Disorders (82%), followed by those with mania (71%), and PTSD (45%).

The relatedness of depression and paranoid ideation with substance abuse might result from the nature of military job, whether deployed or not, in most cases involves considerable stress. Military personnel generally work long hours, and in some respects are never “off duty” even when not officially working. There is often less liberty or freedom of choice in military jobs, where project activities can be highly regimented and must follow strict time schedules. In most cases military personnel become drug addict in service as a result of perceived combat fatigue with alcohol and other substances. Dual disorders often common in military service because of reciprocal relationship among neuro-physiological changes, common psychosocial pattern of externalizing behavior, disrupted interpersonal functioning, and social rejection by prosocial peers.

VII. Conclusion

One of the major contributions of this study is the high predictability variation of substance abuse by

depression and paranoid ideation in the Nigerian military population. Going by these findings, the Nigerian Army should provide holistic approach towards substance use disorders. There is need to sustain psychological evaluation of potential cadets/recruits and troops for and after prolonged deployment, and incorporation in annual medical tests. Measures for the prevention and control of substance use and misuse should be intensified and sustained at all levels. Creation of mental health institute for Army to undertake research, training and treatment is very important.

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