Naif Arab University for Security Sciences
Arab Journal of Forensic Sciences & Forensic Medicine
www.nauss.edu.sa
http://ajfsfm.nauss.edu.sa

Original Article

Substance Use Disorder and Reoffending Among Inmates Awaiting Trial in a Maximum Security Prison in Nigeria

Aishatu Y. Armiya'u[1*], Yusufu T. Maigari[2] , Francis J. Davou[2]

[1] *Department of Psychiatry, Forensic unit, Jos University Teaching Hospital, Murtala Mohammad way Jos. Plateau state Nigeria*

[2] *Department of Psychiatry, University of Jos/Jos University Teaching Hospital, Murtala Mohammad way Jos. Plateau state Nigeria.*

Open Access

Received 25 Nov. 2016; Accepted 27 Mar. 2017; Available Online 17 May. 2017

Abstract

The present study aimed to determine the prevalence of substance use disorder (SUD) and the relationship between inmates with SUD and those without SUD with reoffending.

A cross-sectional, descriptive study was carried out among 366 male inmates awaiting trial in Jos maximum security prison, Plateau state (Nigeria). Two sets of questionnaires were used, namely General Health Questionnaire (GHQ-28) and the Composite International Diagnostic Interview (CIDI).

Prevalence of SUD was 32.8% (120) among inmates. Reoffending was statistically significant with SUD ($p < 0.001$).

These results suggest a significant rate of SUD among awaiting trial inmates. It also shows a significant difference between SUD and reoffending.

Keywords: Forensic Science, Substance Use Disorder, Inmates, Reoffending, Prison, Awaiting trial, Prevalence.

اضطراب تعاطي المواد وتكرار الجريمة عند المساجين في مرحلة انتظار المحاكمة في سجن ذو حراسة مشددة في نيجيريا

المستخلص

تهدف الدراسة الحالية إلى تحديد مدى انتشار اضطرابات تعاطي المخدرات والعلاقة بين السجناء الذين يعانون من اضطراب تعاطي المخدرات وأولئك الذين لا يعانون ذلك الاضطراب في تعاطي تلك المواد لكنهم عادوا للجريمة .

أجريت دراسة وصفية مستعرضة على 366 سجينًا من الذكور الذين ينتظرون المحاكمة في سجن جوس Jos ذو الحراسة المشددة في ولاية بلاتو النيجيرية، استخدمت مجموعتان من الاستجواب، وهما استجواب الصحة العامة GHQ-28 و إجراء المقابلة الدولية المركبّة التشخيصية (CIDI).

* Corresponding Author: Aishatu Y. Armiya'u.
Email:aarmiyau@gmail.com

doi: 10.26735/16586794.2017.020

Production and hosting by NAUSS

كان معدل انتشار اضطراب تعاطي المخدرات بين السجناء 32.8٪ (أي 120 حالة) . وكانت العودة للجريمة مترافقة بشكل ذو دلالة إحصائية مع حالات اضطراب تعاطي المخدرات (p <0.001).

تشير هذه النتائج إلى نسبة كبيرة من حالات اضطراب استخدام المواد المخدرة بين السجناء الذين ينتظرون المحاكمة. لكنها تظهر أيضا فروق ذات دلالة إحصائية بين اضطرابات تعاطي المخدرات والعودة الى الجريمة.

الكلمات المفتاحية: علوم الأدلة الجنائية، تعاطي المواد، العودة للجريمة، السجن، في انتظار المحاكمة، انتشار.

1. Introduction

Drug abuse is illegal and drug abusers are responsible for a disproportionate amount of crime and violence [1-3]. There is increasing evidence from previous studies showing that criminal activity and social disorder are major outcomes of substance use [4-5]. While some criminal behavior is likely to occur in order to finance drug use, the pharmacological effects of alcohol and drug use are also clearly associated with violent crimes [6, 2].

Substance abuse and dependence are more common among prison inmates than the general population [1, 7]. Studies conducted among prison populations in the USA, the UK, Sweden, Uganda and Kenya have shown various prevalence rates for SUD ranging from 55%-66.1% [8-12]. The most recent Nigerian study conducted among 83 convicted violent offenders in a maximum security prison in Jos, North Central Nigeria, by Armiya'u and Perez found a 45.9% prevalence of SUD [13]. However, this study was limited to violent offenders abusing substances and did not evaluate the relationship between SUD and recidivism. Another study by the United Nations Office on Drugs and Crime (UNODC) among suspects awaiting trial and convicted inmates in a Nigerian prison found prevalence of SUD in 60% of their studied sample [14]. These studies revealed that alcohol, cannabis and tobacco are the most commonly abused substances. Other previous studies of psychiatric comorbidity in Nigeria have documented a relatively low prevalence of SUD in prison populations [15-17].

Some studies have clearly demonstrated the role of substance use in predicting both criminal recidivism and new offenses. For instance, a prison study from four Caribbean countries (Dominica, Saint Vincent and the Grenadines, Saint Kitts and Nevis, and Saint Lucia) reported that more than one third of their offenders on remand across all the four countries were previously convicted and imprisoned for drug related offences (drugs abuse, selling/trafficking and production), with a higher proportion of illegal drug use among re-offenders than first time offenders [3].

There is increasing evidence for the association between substance use and criminality, including high rates of criminal recidivism. However, according to the knowledge of the authors, no study has been carried out to evaluate SUD and recidivism in any Nigerian prison. Even though a general population survey will provide useful data on trends of substance use in Nigeria, it would, however, omit the 'hidden' prison population which may offer a lot more insight into drug use and crimes. The present study aimed to determine the prevalence of SUD and its relationship with reoffending among inmates with or without SUD.

2. Materials and Methods

A cross-sectional study was carried out among 366 inmates awaiting trial in Jos prison. The prison was built in 1940 with an inmate capacity of 900, but now has a capacity of 1140 prisoners. Its area of coverage includes Adamawa, Bauchi, Benue, Borno, Plateau, Taraba, and Yobe states. These states constitute approximately 30% of the surface area of Nigeria and have an estimated population of 24,380,042 [18]. Convicts serving life sentences or sentenced to execution are usually homicide offenders and armed robbers who are isolated from other prisoners under

maximum security conditions.

At the time of this study, there were 645 inmates with 366 awaiting trial. The study population comprised all 366 male inmates awaiting trial.

Participants were approached at the prison's conference hall, parade ground or in the clinic in a face-to-face interview. They were first informed of their confidentiality before consent was obtained. Data were collected by the researchers who are consultant psychiatrists fluent in the two major languages spoken by the participants (English, Hausa or both languages). Participants who were literate enough filled out their questionnaires. For inmates who could not read, the researchers read out the questions for them while the participants chose the most appropriate answers for themselves. The questionnaires were translated for participants who were unable to speak English. This was done on every working day until all the eligible inmates awaiting trial were interviewed. A total of 366 participants were interviewed and had their complete demographics and clinical data entered for analysis.

The study was part of a comprehensive study conducted among inmates awaiting trial to assess psychiatric morbidity. The data was collected in two stages as follows:

In the first stage, each consecutive participant filled the socio-demographic and forensic questionnaires alongside the 28-item General Health Questionnaire (GHQ-28).

In the second stage, participants with a GHQ-28 score of four (4) and above were interviewed using the Composite International Diagnostic Interview (CIDI), which took the form of a clinical interview. Thus, 193 participants with a GHQ-28 score of at least 4 were therefore interviewed with the CIDI instrument to assess for lifetime use of substances. Those who fulfilled the ICD-10 diagnostic criteria (120) were assigned a diagnosis of SUD.

The Statistical Package for Social Sciences (SPSS) version 15.0 was used to analyze the data. The results were presented using simple descriptive analysis. Continuous variables were analyzed using *t*-test to compare mean values, and chi-square test was used to investigate the difference between categorical variables and their associations. A value of $p < 0.05$ was considered statistically significant.

3. Results

Fifty-two percent (52%) of the studied inmates were within the age group of 25-34 years with a mean age of 32.1±10.6 (Table-1). Two hundred and three (55.5%) were single, 33.9% married while 0.5% were widowed. Forty-six percent (46%) had some form of secondary school education while 12% had no formal education (Table-1). More than half (56.8%) of the studied subjects were unemployed before incarceration, while 16.4% were students.

Half of the studied subjects (50%) were arrested for others offences i.e. mutiny, breach of trust, theft, conspiracy, cheating, assault, rape, fighting, drugs and rioting (Table-1). Out of the remaining 50%; 38.0% were imprisioned for armed robbery, 11.5% had murder offence, and 0.5% for manslaughter (Table-1).

Prevalence of SUD was found among 120 (32.8%) inmates (Table-2). Almost half of the inmates 52 (43%) were using alcohol, 38 (31%) used cannabis, 22 (18%) abused tobacco, 2 (2%) used cocaine and caffeine, respectively; 3 (3%) abused solvent, 1 (1%) was using heroin and the majority 82 (68%) used multiple substances.

Reoffending was statistically significant with SUD ($p < 0.001$) (Table-3). Reoffending was based on previous incarceration of an inmate for any offence including serious offences. This was mainly based on self-reporting and records where available (this is due to poor record keeping). The previous prison terms and number were also looked at for each inmate with previous incarceration.

4. Discussion

This study was based on a sample of awaiting trial inmates at a maximum security prison in Jos, Nigeria. The

Table 1- *Descriptive frequency of the sociodemographic characteristics of studied subjects.*

Variables	*n* = 366		Mean ± S.D.
	Frequency	Percentage (%)	
Age Group (years)			
15 – 24	97	27	
25 – 34	189	52	
35 – 44	54	15	32.1±10.6
45 – 54	15	4	
55 – 64	8	2	
>65	3	0.8	
Religion			
Christianity	245	67	
Islam	115	31.4	
Traditional	4	1.1	
No religion	2	0.5	
Nationality			
Nigerian	366	100	
Marital status			
Married	124	34	
Separated	24	6.6	
Widowed	2	0.5	
Divorced	13	3.6	
Single	203	55.5	
Educational status			
No formal education	45	12	
Primary	83	23	
Secondary	168	46	
Tertiary	70	19	
Employment status			
Unemployed	208	56.8	
Employed	59	16.1	
Students	60	16.4	
Apprentice	39	10.7	
Offence charged			
Murder	42	11.5	
Manslaughter	2	0.5	
Armed Robbery	139	38	
Others	183	50	

Table 2- *Descriptive frequency of substance use disorder among the studied population.*

Variables	*n* = 366	
	Frequency	Percentage (%)
Alcohol	52	43
Marijuana	38	31
Tobacco	22	18
Cocaine	2	2
Heroin	1	1
Solvent	3	3
Caffeine	2	2
Multiple substance use	82	68

Table 3- *Relationship between re-offending and substance use disorder among subjects studied. Comparing those with or without substance use disorder.*

Previous prison detention	Substance use disorder		
	Present Frequency (%)	Absent Frequency (%)	Total Frequency (%)
Yes	48 (55.8)	38 (44.2)	86 (100)
No	72 (25.7)	208 (74.3)	280 (100)
Total	**120 (32.8)**	**246 (67.2)**	**366 (100)**

Chi square: 27.049, $p < 0.001$

study showed that majority of the subjects were abusing alcohol, cannabis or tobacco, rather than other substances, with more pronounced multiple drug abuse.

The prevalence of SUD among awaiting trial inmates in this study was found to be 32.8%, a rate that agreed with previous reports among Nigerian prison inmates. These studies included Armiya'u and Adole [15], Abdulmalik et.al. [16] and Armiya'u et.al. [17] who reported a SUD prevalence of 26.1%, 20.1% and 48.7% in their respective samples [15-17]. A more recent study conducted at a maximum security prison in Nigeria among awaiting trial and convicted inmates showed that 60% of the inmates had used alcohol and illegal drugs before their current offense [14].

However, the observed prevalence rate of 32.8% in our study is relatively low compared to rates reported in other international studies of prison population (USA; 55%, UK; 64%, Uganda; 65% and Kenya; 66%) [8-9, 11-12].

The rate of SUD among reoffenders in this study was double that found among those in prison for the first time; (55.8% versus 25.7%). The finding also showed a statistically significant association ($p < 0.001$) between reoffending and SUD among the studied sample. This finding is similar to a study by Mumola & Karberg's and Dolan et.al. [20] who reported that prisoners meeting DSM-IV criteria for drug abuse or dependence were more likely to have a criminal history and majority of them end up in prison. It is however in contrast to a study in the United States of America which found no significant association between drug abuse and new drug arrest [21]. Another study showed that after release from prison, the risk of reoffending is particularly high among those dependent on psychoactive substances [22]. This is because while some part of criminal behavior is likely to occur in order to finance drug use,

substance use is also clearly associated with violent crime [6, 2].

Forty-three percent of the studied inmates had alcohol abuse/dependence. Previous studies in Nigeria revealed that alcohol was the single most abused substance among prisoners [13]. For instance, William et al. in their previous study in Nigeria found a higher rate in terms of life time use of substances, and alcohol use was reportedly the highest in 77.5% of their sample [23]. An incredibly higher rate 92.1% of alcohol use disorder was also found in a Lithuanian study [24].

The relationship between alcohol use and crime is well documented [3, 25]. A study conducted in the UK revealed that a significant proportion of offenders committed their crimes under the influence of alcohol [25].

The rate of Cannabis abuse/dependence in this study was found to be 31% (this is calculated using percentage of only those subjects with SUD i.e. 120). A similar study conducted in European Union Countries found that Cannabis was the most frequently reported illicit drug used, with lifetime prevalence rates of 11 – 86% among inmates in prisons in the EU countries [26].

Tobacco abuse/dependence was found in 18% of the inmates studied, which is lower than the respective rates of 22.9% and 48.7% reported in previous studies in Nigeria [24] and Lithuania [25].

Notable in our findings is the fact that multiple drug use is considerably high. On the other hand, cocaine and heroin abuse were extremely low, which is different from the situation in some western countries [27]. This is likely because cocaine and heroin are expensive in Nigeria and most of the studied sample inmates were from a low socio-economic class.

The above findings, however, need to be interpreted in the light of some methodological limitations: our results cannot be generalized across all reoffenders because the sample was drawn from male reoffenders and from a single sited prison. In addition, though the instruments used were structured, some participants can still deny the use of substances even though they have used them before. However, the strength of this study lies in the fact that it is the first study from the North Central Nigeria to examine substance use and reoffending in inmates awaiting trial. Moreover, findings documented in the present study are consistent with previous research. A notable advantage of prison studies is the availability of the subjects and a high participation rate. Thus, a hundred per cent level of participation was attained in the present study.

5. Conclusion

This study showed significant difference between reoffending and SUD with a higher prevalence among recidivist compared to first time offenders in a Nigerian prison. It is recommended that treatment of such inmates while in prison is imperative to reduce possible reoffending among this group of offenders.

Ethical Consideration

Permission was granted by the Prison Authority of Jos. Ethical approval was obtained and granted by the Ethical Committee of Jos University Teaching Hospital vide letter no. JUTH/DCS/ADM/127/XIX/2758. All participants signed or thumb printed for informed consent before the study.

Conflict Of Interest

No conflict of interest associated with this work.

References

1. National Institute on Drug Abuse. Principles of Drug Abuse Treatment for Criminal Justice System. A Research Based Guide. 2014
2. Fridell M, Hesse M, Jaeger MM, Kühlhorn E. Antiso-

cial personality disorder as a predictor of criminal behaviour in a longitudinal study of a cohort of abusers of several classes of drugs: relation to type of substance and type of crime. Addict Behav. 2008; 33: 799-811.

3. Organization of American States. Exploring the relationship between drugs and crime: a comparative analysis of survey data from prisoners: Dominica, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. Inter-American Drug Abuse Control Commission, 2012. ISBN 978-0-8270-5912-2.
4. Chersich MF, Luchters SM, Malonza IM, Mwarogo P, King'ola N, Temmerman M. Heavy episodic drinking among kenyan female sex workers is associated with unsafe sex, sexual violence and sexually transmitted infections. Int J Std Aids 2007; 18: 764-9.
5. Mumola CJ. Substance abuse and treatment, state and federal prisoners, 1997. Alcohol 1999; 21.
6. Stewart D, Gossop M, Marsden J, Rolfe A: Drug misuse and acquisitive crime among clients recruited to the National Treatment Outcome Research Study (NTORS). Crim Behav Ment Health 2000; 10: 10-20.
7. Gray M, Littlefield M. Black women and addiction. In S L A Strausser & S Brown (Eds.), The handbook of addiction treatment for women. Jossey-Bass, San Francisco, CA, 2001; 301-22.
8. Wilson, DJ. Drug use, testing, and treatment in jails. Washington DC: US Department of Justice, 2000.
9. Ministry of Justice. Gender differences in substance misuse and mental health amongst prisoners, Results from the Surveying Prisoner Crime Reduction (SPCR) longitudinal cohort, 2013.
10. Anders H, Mats B. Risk factors for criminal recidivism – a prospective follow-up study in prisoners with substance abuse. BMC Psychiatry 2012; 12: 111
11. United Nations Office on Drugs and Crime (UNODC). A Rapid Situation Assessment of HIV/STI/Tb and Drug Abuse among Prisoners in Uganda Prisons Service, March 2009, UPS/UNODC RSA 2008, available at: http://www.refworld.org/docid/5375e5d14.html [accessed 27 March 2017]
12. Daniel WC, Kinyanjui A, Lukoye A. Substance use among inmates at the Eldoret prison in Western Kenya. BMC Psychiatry 2013; 13:53
13. Armiya'u YA, Perez A. Demographic Factors, Forensic Profile, Substance Abuse and Crime in Violent Offenders at a Maximum Security Prison in North Central Nigeria. J forensic Sci & Criminal Inves 2016; 1: 555558.
14. United Nations Office on Drugs and Crime (UNODC). World Drug Report, 2011.
15. Armiya'u AY, Adole O. Relationship between Sociodemographic Characteristics, Psychiatric Burden and Violent Offence in a Maximum Security Prison in North-Central Nigeria. J Forensic Sci Criminol 2015; 3: 202.
16. Abdulmalik JO, Adedokun BO, Baiyewu OO. Prevalence and correlates of mental health problems among awaiting trial inmates in a Prison facility in Ibadan, Nigeria. Afr J Med Med Sci 2014; 43(Suppl 1): 193–9.
17. Armiya'u AY, Obembe A, Audu MD, Afolaranmi TO. Prevalence of psychiatric morbidity among inmates in Jos maximum security prison. O J Psych 2013; 3: 12-7.
18. National Population Commission. Federal ministry of internal affairs, Abuja Nigeria. Census, 2006.
19. Mumola CJ, Karberg JC. Drug use and dependence, state and federal prisoners, 2004.Washington, DC: US Department of Justice, 2006.
20. Dolan K, Khoei E, Brentari C, Stevens A. Prisons and drugs: A global review of incarceration, drug use and drug services. Beckley Park, UK: The Beckley Foundation Drug Policy Programme Report 12, 2007a
21. Beth M H. Drug abuse, treatment and probationer re-

cidivism. Illinois Criminal Justice Information Authority, 2006.

22. Hough M. Drug user treatment within a criminal justice context. Subst Use Misuse 2002; 37: 985–96
23. William EN, Adamson AT. Psychoactive substance use among inmates in a Nigerian prison population. Neuropsychiatric hospital Aro, Abeokuta Nigeria. Available online at http://www.crisanet.org/docs/conference_08/Paper/SPECIAL_POPULATION/Ebiti_Prisons.pdf [Accessed on 21 January 2011].
24. Narkauskaite L, Juozulynas A, Mackiewicz Z, Surkiene G, Prapiestis J. The prevalence of psychotropic substance use and its influencing factors in Lithuanian penitentiaries. Med Sci Monit 2007; 13: CR131-5
25. Home Office. Nature of Violent Crime, London: Home Office. Table 7.10, 2011
26. European Monitoring Centre for Drugs and Drug Addiction. Annual report: the state of the drugs problem in the European Union and Norway, Lisbon, 2004.
27. Makkai T, Payne J. Drugs and crime: a study of incarcerated male offenders. Australian Instit Criminol 2003.