THE PREVALENCE AND RISK FACTORS FOR PSYCHIATRIC DISORDERS AMONG YOUTHS IN A BORSTAL INSTITUTION IN NIGERIA

Yussuf AD, Ajiboye PO, Issa BA, Buhari OIN

ABSTRACT

Objectives: To document psychiatric disorders and the risks among youths in a Borstal in Nigeria in order to direct the focus of policy makers to their mental health needs.

Design: 2-staged cross-sectional study.

Place and duration: This study was conducted in a borstal institution in Ilorin, Nigeria in October, 2008.

Subjects and Methods: All the inmates were recruited and administered with socio-demographic and GHQ-12 questionnaires; and a MINI KID interview. Data was analyzed with SPSS for Windows, version 11, using 2-tailed tests at a 5% level of significance.

Results: Of the 53 inmates, 58.5% stayed >24weeks, 35.8% were in middle position within family, the parents were responsible for inmates' admission in 81.1%, and 64.2% had their parents living together. While 62.3% had psychiatric problems in the past months, 50.9% had MINI lifetime diagnoses, and 45.3% had 'current' diagnoses. When diagnoses were collapsed, 98.1% had 'any psychiatric disorder', 67.9% had 'any distruptive behaviour disorder' (DBD), 58.5% had 'any substance use disorder', and 54.7% had 'any mood disorder'. The mean psychiatric diagnosis in the cohort was 4.26±2.5. Significant associations were observed between Christianity and 'any DBD' [(x^2= 6.34,df=1,p=0.01),(r=-0.35,OR=1.8,CI=1.0-2.9, p=0.01)]; parents who were living together and 'any mood disorder' [(x^2=6.4, df=1, p=0.01), (r=-0.35,OR=2.1, CI=1.1-4.3, p=0.01)], and 'any current disorder' [(x^2=4.3, df=1, p=0.04), (r=-0.28, OR=2.1,CI=0.9-4.7, p=0.04)]; and between ages >18years and 'any psychiatric disorder' [(x^2=9.8,df=3, p=0.02),(r=0.33, p=0.02)].

Conclusions: Findings were indicative of the prevalence of mental disorders, and the need to refocus attention on this cohort.

Key words: Psychiatric disorders, Borstal institution, Nigeria.

INTRODUCTION

The mental health needs of the youths and adolescents in the juvenile justice system appear on the increase[1,2]. Epidemiological studies have estimated that between two thirds and three quarters of youth inmates have 1 or more psychiatric disorders, with major mental disorders (e.g., affective disorder, psychosis) estimated to be between 15% and 79%[1,3-5]. These high rates have been attributed to the possible high level of vices among these youths. For instance, studies[5-9] have shown the increasing rates at which many of our youths are taking into the streets, indulging in all forms of drugs or substances, and acts that may impact negatively on their mental health.

In Nigeria, although many studies have investigated psychiatric disorders among inmates of Nigerian prisons[3,10-13], and while some investigated psychiatric disorders either among young offenders in adult prisons or among adult offenders[3,11,12], the only one that could have been closer to studying youths in Borstal institutions was done in a Remand home and it focused on the correlates of delinquency[10]. The dearth of studies among young inmates in Nigeria may not be unconnected to its weak and dysfunctional juvenile justice system, despite being a signatory to the major international instruments relevant to the administration of juvenile justice[14]. This study is about the first to focus on the study of psychiatric disorders among youth inmates in the Borstal

Yussuf AD, MB,BS, FMCPsych., Cert. HP&Mgt., Department of Behavioural Sciences, College of Health Sciences, University of Ilorin, PMB 1515, Ilorin, Nigeria.

Ajiboye PO, MB,BS, FWACP, Department of Behavioural Sciences, College of Health Sciences, University of Ilorin, PMB 1515, Ilorin, Nigeria.

Issa BA, MB,BS, FWACP, MPH, Cert. H Inf., Department of Behavioural Sciences, College of Health Sciences, University of Ilorin, PMB 1515, Ilorin, Nigeria.

Buhari, OIN, MB,BS, FWACP, Department of Behavioural Sciences, University of Ilorin Teaching Hospital, PMB 1459, Ilorin Nigeria.

Correspondence:

Dr. Yussuf AD

institution in Nigeria. With the establishment of functional Borstal institutions in Ilorin, Nigeria, in December, 2005, and the growth of youth inmates' populations (anecdotal report of an advocate), epidemiologic data on the prevalence of psychiatric disorders in this group has become imperative. Like their adult counterparts, youth inmates with serious mental disorders have a constitutional right to receive needed treatment. We believe that providing psychiatric services to this population could improve their quality of life and help reduce recidivism, but until we have better data, we might not know how best to use the nation's scarce mental health resources for this group.

This report is part of a large-scale study of the youth inmates of an exclusively male Borstal Institution in Ilorin, Nigeria, and we planned to investigate the proportion of these inmates who had mental disorders, and the possible associated variables. Many psychiatric surveys have been done in prisons, but they have often focused on specific areas such as violence, substance abuse or delinquency[10,11,13]. More holistic estimates of the prevalence rates of major mental disorders among youth inmates, such as psychotic illnesses, major depression, substance use disorders, and disruptive behaviour disorders (DBD) could help inform public policy and prison mental health services especially as may affect the youth inmates. The authors have investigated 3 questions: (1) What proportions of the inmates were likely to have mental disorders, (2) What categories of psychiatric disorders were likely to be present, and (3) What were the likely associated risk factors for these disorders. The study's hypotheses were: (1) About two-third of the inmates would have one form of major mental disorder (e.g., affective disorders, psychotic disorders, DBD, and substance use disorders); and (2) Socio-demographic factors (e.g., age, ethnicity, duration of stay at the institution, religion, and parental living status) would be associated with the inmates' mental disorder.

SUBJECT AND METHOD

The study setting

The present study was a cross-sectional one conducted in a borstal institution in Ilorin, a North-central town of Nigeria in October, 2008. The sample was stratified by ethnicity (Ibo, Yoruba, Hausa; the major ethnic groups in Nigeria; and others), age, religion, source of referral to the institution, duration of stay at the Borstal, parents' living status, and the inmates' position in the family. Cognitive impairment was an exclusion criterium. Because studying youth inmates may require special procedures being minors, in confinement, and may not have a parent or guardian who can provide appropriate consent. The authors approached potential participants at the institution, explained the project, and assured them that their responses would be kept confidential, except where necessary immediate intervention is required (e.g., acute severe mental disorder).

Participants signed an assent form (if they were younger than 18 years) or consent form (if they were aged 18 years and above). We nevertheless attempted to contact their parents to provide them with information and an opportunity to decline participation of their wards.

Where parents were not available, senior officials of the institution (Principal, Vice-principal, or Senior teachers, who were all Prisons staff) were requested to give consents on their behalf.

The study involved a 2-staged procedure. In the 1st stage (i.e., a screening stage), every inmate was given a questionnaire booklet consisting of socio-demographic questionnaire and the General Health Quesionnaire-12 (GHQ-12)[16], an instrument that has been validated among prison populations[17], and in this environment[18,19]. The participants had no problems responding to these questionnaires because the institutions officials and researchers were on hand to give necessary explanations where expedient. The institution's officials were given the responsibility for collection and custody of the completed questionnaires until after the second stage (i.e., MINI interview- to ascertain possible psychiatric diagnoses) to ensure that researchers were blind to the inmates' scores on GHQ-12. The 2nd stage involved interviewing with MINI-KID[20]. MINI was designed as a brief structured interview for the major axis I psychiatric disorders in DSM-IV and ICD-10. It has acceptable validity and reliability and clinicians require relatively brief training session, while lay interviewers require more extensive training. The inmates of the Borstal were 70, all males, 53 of them were eligible for the study; 17 (24.3%) were ineligible because they were too cognitively impaired to be interviewed (they were only brought into Borstal for vocational training). Being a small population, and to further reinforce the findings of the 1st (i.e., screening) stage, all the eligible 53 inmates (total sampling) were made to go through MINI-KID interview (regardless of their GHQ-12 scores: caseness or non-caseness using a cut-off score of 3), which on the average span through 50minutes per inmate. The interview was conducted by YAD, APO, IBA, BOIN, after an initial interview with randomly selected group during which inter-rater reliability (Kappa) of 0.86 was recorded.

The study population

This study was exclusively on the 53 inmates of the borstal, aged 14 to 23 years (it is instructive to note that the ages of inmates were outside of the stipulated ages by the act establishing the Borstal, because there was no strict adherence to the rule to encourage patronage by impending beneficiaries), remanded at the Juvenile Borstal Institution in Ilorin, the Kwara State Capital. The Institution was the second of such in Nigeria, the other being in Kaduna, North-Western zone; both have been exclusively for male youths, and none yet for females. It is a purposely-built institution equipped with crafts, sporting and academic materials for the training of youth inmates.

By law, youth with serious mental disorders must receive mental health treatment while in custody[4]. In Nigeria however, despite the promulgation of an act establishing Borstal Institutions and Remand Centers, in April, 1962[15], there has been no functional juvenile justice system. The public outcry against committing children and youths to prison led to the need for the establishment of functional Borstal Institutions in the country to ensure adequate provision of a conducive training of young offenders, and to enhance juvenile justice administration. Hence, the transfer by the Federal Ministry of Health and Social Welfare in 1995 of the Child Welfare Centre in Ilorin to the Nigerian Prisons service, to be used as Borstal Institution.

In December, 2005, the Borstal Institution and Remand Centers were established through the Borstal Institutions and Remand Centres Act[15].

Statistical analysis

Because the inmates were stratified by age, ethnicity, religion, and MINI diagnoses, the frequency distributions of these variables, chi-square figures, correlation analysis, and odd ratios were determined at 95% confidence interval, we used 2-tailed tests, and the analysis was done using SPSS for Window, version 11.0, and our level of significance was put at 0.05.

RESULTS

Table 1 shows the characteristics of the inmates. Of the 53 inmates, their mean age±SD and duration of stay±SD at the Borstal were 17.3±2.1years and 64.9±41.6weeks, respectively. Majority were Christians (62.3%), and stayed >24weeks (6months) (58.5%) while 35.8% were in middle position within the family, and 32.1% were of Hausa ethnic group. The parents were responsible for bringing 81.1% of the inmates to the Borstal (i.e., source of referral), and the parents were living together in 64.2% of the inmates.

As shown in Table 2, 50.9% of the inmates had MINI lifetime psychiatric diagnoses comprising lifetime depression (35.8%), and lifetime suicidality (20.8%) while 45.3% had current psychiatric diagnoses comprising hypomania and post- traumatic stress disorder (7.5% each), and panic disorder (5.7%). Majority (62.3%) of the inmates had psychiatric problems in the past months comprising 'any disruptive behaviour disorders' (DBD) (67.9%), and 'any substance use disorder' (58.5%). Some inmates had more than one MINI diagnosis.

When the psychiatric diagnoses were collapsed (Table 3), 98.1% of the inmates had 'any psychiatric disorder', 67.9% had 'any disruptive behaviour disorder' (DBD), 58.5% had 'any substance use disorder', and 54.7% had 'any mood disorder'. The mean number of occurrence of psychiatric diagnoses, whether occurring as co-morbidities or separately in the cohort, was 4.26±2.5.

Table 1

Sociodemographic variables of Borstal inmates *(N=53)*

Variables	n (%)
Age group	
<11 years	5 (9.4)
11-14 years	4 (7.5)
15-18 years	16 (30.2)
>18 years	28 (52.8)
Religion	
Christianity	33 (62.3)
Islam	20 (33.7)
Position in family	
Firstborn	14 (26.4)
Middle position	19 (35.8)
Lastborn	12 (22.6)
Only child	8 (15.1)
Parents' living status	
Living together	34 (64.2)
Not living together	19 (35.8)
Source of referral	
Parents	43 (81.1)
School authority	1 (1.9)
Government agencies	3 (5.7)
NGOs/Concerned citizens	6 (11.3)
Duration of stay (weeks)	
<8 weeks	8 (15.1)
8-24 weeks	14 (26.4)
>24 weeks	31 (58.5)

The collapsed diagnoses and the socio-demographic variables were further subjected to chi-square and correlation analyses, to determine possible association. Significant associations were found between psychiatric diagnoses and socio-demographic factors such as age of the inmates, their position in the family, religion, and parents' living status. Inmates who were of Christian faith were significantly more likely to have 'any disruptive bahaviour disorders' (DBD) [(x^2= 6.34, df=1,p=0.01), (r=-0.35, OR==1.8, CI=1.0-2.9, p=0.01)], those whose parents were living together were significantly more likely to have 'any mood disorders' [(x^2=6.4, df=1, p=0.01), (r=-0.35, OR=2.1, CI=1.1-4.3, p=0.01)], and 'any current psychiatric disorders' [(x^2=4.3, df=1, p=0.04), (r=-0.28, OR=2.1, CI=0.9-4.7, p=0.04)]. Those who were >18years were significantly more likely to have 'any psychiatric disorders' [(x^2=9.8,

Table 2

Psychiatric diagnoses (current, past and lifetime) among Borstal inmates (n=53)

Psychiatric disorders	Current (n,%)	Past 6; 12 months (n,%)	Lifetime (n,%)
Conduct disorder	—	34 (64.2)	—
Oppositional defiant behaviour	32 (60.4)	—	—
Marijuana abuse	—	21 (39.6)	—
Marijuana dependence	—	21 (39.6)	—
Depression	—	—	19 (35.8)
Alcohol abuse	—	14 (26.4)	—
Alcohol dependence	—	14 (26.4)	—
Suicidality	—	—	11 (20.8)
Depression	9 (17.0)	—	—
Hypomania	—	9 (17.0)	—
Attention deficit/hyperactivity disorder	8 (15.1)	—	—
Hypomania	6 (11.3)	—	—
Cocaine abuse	—	5 (9.4)	—
Cocaine dependence	—	5 (9.4)	—
Dysthymia	4 (7.5)	—	—
Post traumatic stress disorder	4 (7.5)	—	—
Panic disorder	3 (5.7)	—	—
Panic disorder	—	—	2 (3.8)
Psychotic disorder	2 (3.8)	—	—
Psychotic disorder	—	—	2 (3.8)
Obsessive-complusive disorder	1 (1.9)	—	—
Separation anxiety disorder	1 (1.9)	—	—

df=3, p=0.02), (r=0.33, p=0.02, OR was not computable)]. The association between socio-demographic variables such as firstborn, and duration of stay (>24weeks) was a weak one with 'any current psychiatric disorders' [(x^2= 8.54, df=3, p=0.04), (r= -0.06, p=0.68)], and any lifetime psychiatric disorders [(x^2=5.7, df=2, p=0.06), (r=-0.19, p=0.2)], respectively.

GHQ-12 score

Of the 53 respondents, 26 (49.1%) scored 3 and above on the ghq-12, and were therefore regarded as having probable psychiatric morbidity. This will be presented in future articles.

DISCUSSION

Prevalence of Psychiatric disorders

Like previous studies[1,4,5,21] that have reported over-representation of males among youth inmates, this study also observed male dominance, but interpreting this finding need to be done with caution because the study center was statutorily a designated male institution, hence females were un-arguably likely to be totally absent in such setting, a situation that was similar to the study of Ozen et al[21] that reported as high as 98.2% male dominance in youths with criminality. However, at the time of our study, there was no provision for female

Table 3
Collapsed Psychiatric diagnoses among Borstal inmates (n=53)

Disorders	Current (n,%)	Past 12 months (n,%)
Any psychiatric disorder	52 (98.1)	—
Marijuana-related disorders	—	42 (79.2)
Any distruptive behaviour disorder	36 (67.9)	—
Conduct disorder	34 (64.2)	—
Oppositional defiant behaviour	32 (60.4)	—
Any substance use disorder	31 (58.5)	—
Any mood disorder	29 (54.7)	—
Alcohol-related disorders	—	28 (52.8)
Depression	28 (52.8)	—
Hypomania	15 (28.3)	—
Any anxiety disorder	10 (18.9)	—
Cocaine-related disorders	—	10 (18.8)
Attention deficit/hyperactivity disorder	8 (15.1)	—
Panic disorder	5 (9.5)	—
Psychotic disorders	4 (7.6)	—
Post traumatic stress disorder	4 (7.5)	—
Dysthymia	4 (7.5)	—
Any psychotic disorder	3 (5.7)	—
Obsessive-complusive disorder	1 (1.9)	—
Separation anxiety disorder	1 (1.9)	—

Borstal Institution in the country. This could give erroneous impression that there were no female youths with criminality, and contrary to earlier reports of increasing, but comparatively low, population of female youths with criminality[1,4].

We also observed that older inmates (i.e., >18years) were more than half of our study population, a finding that could imply that older inmates were more criminally inclined than the young ones in this community, and was consistent with the finding of previous studies[3,10] but contrary to that of Ozen et al[21] who reported 87.9% juvenile offending in those between 12 and 15 years of age, and only 6.7% offending in those between 16 and 19 years of age. Another possible explanation for this finding could be that these older inmates were brought into the borstal at perhaps young ages and were yet to complete their terms or completely reformed at the time of our study. This view was further reinforced by the observation that over half of the cohort had stayed beyond 24weeks in the institution.

The observation that majority of the inmates had stayed for long period (i.e., >24weeks) at the Institution could be because major psychiatric disorders, especially in the absence of adequate and appropriate intervention, are more likely to persist. This assumption was supported by the study of Tarolla et al[22] that linked serious and violent youth offending with adverse health, educational, vocational, and interpersonal consequences, and could persist into adulthood.

Effects of religion on youth criminality may need further studies. The authors also observed a high prevalence of psychiatric disorders comprising disorders in the past months (62.3%), lifetime psychiatric disorders (50.9%), and current disorders (45.3%). This finding was

in consonant with previous studies[5,23] that have reported such a high prevalence among youths with criminality. Because the inmates were generally an assemblage of boys with behavioural problems, the finding may not be too surprising in an institution that was statutorily designated for difficult youths who might have conflicted with established rules and regulations whether at home (by contravening parental dictates) or in the society. These assumptions were also reinforced by the observed finding of prevalence of these disorders among inmates who were brought to the institution from homes where both parents were living together. This might also be suggestive of poor parenting or inherent behavioural problems in these youths. This was consistent with previous studies[8,10,21] that have identified delinquent behaviours as reasons for sending inmates to remand homes by parents. For instance, Ogunlesi[10] reported that 70.6% of his cohort was remanded because they were beyond parental control. On the other hand, some studies[21,22] have attributed difficulty of parental control to parental factors. For instance, incurable physical and mental unhealthiness of parents due to socioeconomic burden have been reported as possible causes of insufficiency of parental control over children, and parents who were having health problems may be unable to look after their children optimally.

In addition, youth criminality is often regarded as a population of multi-problems with persistent co-occurring problems such as psychiatric disorders, substance abuse, and recurrent victimization. Existing data have reported disruptive behaviour disorder (DBD) (75-100%), substance use disorders (27-63%), and depressive and mood disorders (18-48%) among them[23]. Similarly, we have also observed a high prevalence of 'any psychiatric disorders' (98.1%), 'any disruptive behaviour disorders' (DBD) (67.9%), and 'any substance use disorders' (58.5%), among our cohorts. The specific psychiatric syndromes we found among the inmates included: 'lifetime psychiatric disorders', 50.9% (e.g., depression, 35.8%; suicidality, 20.8%; and panic disorder, 3.8%), 'current disorders', 45.3% (e.g., depression, 17%; hypomania, 11.3%; PTSD, 7.5%; and psychotic disorder, 3.8%), and 'disorders in the past months', 62.3% (e.g., DBD, 67.9%; substance use disorders, 58.5%; and hypomania, 17.0%). This was in consonant with previous studies that have reported high rates of specific psychiatric disorders[5,22,23]. The severity of these major psychiatric disorders could have prevented early resolution, especially without necessary intervention (i.e., contact with mental health care), and hence, the long stay of the inmates at the Borstal. This was however contrary to the submission of Otakpo & Asikhia[3] that the rates of psychiatric disorders tend to reduce significantly over a period of 6months after incarceration. In our opinion, the inmates could have been having persistent, undetected, underlying psychiatric disorders right from their respective homes, and perhaps, the primary cause of their admission at the Borstal. Chronic youth criminality has been associated with adverse health, educational, vocational, and interpersonal consequences that are resistant to change, and without intervention may continue, even into adulthood[23].

Consequent upon this study, 16 (30.2%) new referrals to UITH's psychiatric unit were made for immediate psychiatric intervention in addition to 8 (15.1%) inmates who were already receiving treatment at the psychiatric out-patient unit of the hospital at the time of our study.

Risk factors for psychiatric disorders

The study also showed the impact of socio-demographic variables (e.g., age-group, inmates' position in the family, religion, parents' living status, and duration of stay of the inmates at the Borstal) on specific psychiatric diagnoses. The observed association between firstborn and specific psychiatric diagnoses could be due to some excessive demands/responsibilities bestowed on firstborns. These may have engendered the development of 'any current psychiatric disorder' especially in psychologically immature individual.

One wonders why inmates who were from Christian homes had 'any DBD'. Perhaps, the liberal life style and the permissiveness to social liberty in Christian homes may be responsible for this finding. It is believed that Islam prohibits certain behaviours that might be permissible in Christianity (e.g., use of alcohol). It was therefore possible that inmates from such homes indulged in some social vices that perhaps could be detrimental to their mental health. Further study may be needed to ascertain this. Observation of 'any mood disorder' as well as 'any current disorder' among inmates whose parents were living together could be the consequence of poor parenting (e.g., overindulgence) or behavioural problems with the youths. This could further explain the trend with firstborn positions (though, significant correlation was not retained) in their respective families, and was in consonant with previous studies[1,10] that have reported increased psychiatric disorders among individual in the ordinal position. This was also buttressed by the advanced ages of these inmates, who we observed were more likely to have 'any psychiatric disorder'. The firstborns were likely to be advanced in ages, a situation that still reinforced the possibility of a high expectation, increased responsibilities/demands from the inmates by their parents or siblings. The desire to succeed, and the fear of failure could also have overwhelming negative impact on these inmates who were firstborns, and advanced in ages (i.e., >18years). This was comparable to the finding of Teplin et al[1] whence he reported lower prevalence rates among youngest youths. It has been suggested that many youths in the juvenile justice system may develop new or additional disorders as they age[1]. In this study, all but one inmates had 'any psychiatric disorders' (52 or 98.1%), 67.9% had 'any DBD', 58.5% had 'any substance use disorder', and 18.9% had 'any anxiety disorder'. The observed high prevalence of psychiatric disorders among our cohort was higher than the

previously reported rates. For instance, Teplin et al[1] reported a rate as high as 60% of diagnosis-specific impairment for one or more psychiatric disorders in their cohort, and in Otakpo & Asikhia's study[3], a prevalence of 78.7% for psychiatric disorders was reported.

LIMITATIONS

It is important to note that since the inmates had emotional/behavioural problems severe enough to be admitted at the Borstal institution, the study was biased from outset toward inclusion of individuals with a high degree of Axis I diagnoses. Therefore, the result of this study cannot be generalized to other youth offender populations such as those in adult prisons, those attending out-patient clinics, or general adolescent populations. Until a functional Juvenile Justice System is operational in Nigeria, studies are not likely to capture most of the youths with criminality, detained in only two available Borstal institutions. In addition, the study's sample size was relatively small, therefore limiting the scope of its conclusions. Larger sample size would have allowed further analysis for more definitive conclusion. However, the authors believe that these findings could generate further research interest and redirect mental health policy especially as it affects the youths with criminality.

PRACTICE IMPLICATIONS

Adequate provision of comprehensive psychiatric services to this youth population in Borstal institutions could improve their quality of life and help reduce recidivism.

REFERENCES

1. Teplin LA, Abram KM, McClelland GM, Dulcan MK, Mericle AA. Psychiatric disorders in youth in juvenile detention. Arch Gen Psychiatry 2002;59:1133-43.
2. Chitsabesan P, Kroll L, Bailey S, Kenning C, Sneider S, MacDonald W, et al. Mental health needs of young offenders in custody and in the community. Br J Psychiatry 2006;188:534-40.
3. Otakpo AN, Asikhia UE. Psychiatric disorders among young offenders in a Nigerian prison community. Niger Postgrad Med J 2000;7:71-4.
4. Teplin LA, Abram KM, McClelland GM, Washburn JJ, Pikus AK. Detecting mental disorder in juvenile detainees: who receive services? Am J Public Health 2005;95:1773-80.
5. Desai RA, Goulet JL, Robins J, Chapman JF, Migdole SJ, Hoge MA. Mental health care in juvenile detention facilities: a review. J Am Academic Psychiatry Law 2006;34:204-14.
6. Abdulkarim AA, Mokuolu OA, Adeniyi A. Drug use among adolescents in Ilorin, Nigeria. Trop Doct 2005;35:225-8.
7. Lawoyin TO, Ajumobi OO, Abdul MM, AbdulMalik JO, Adegoke DA, Agbedeyi OA. Drug use among senior secondary school students in rural Nigeria. Afr J Med Med Sci 2005;34:355-9.
8. Olley BO. Social and health behaviours in youth of the streets of Ibadan, Nigeria. Child Abuse Negl 2006;30:271-82.
9. Adewuya AO. Prevalence of major depressive disorder in Nigerian college students with alcohol -related problems. Gen Hosp Psychiatry 2006;28: 169-73.
10. Ogunlesi AO. Nigerian juvenile offenders: a case-controlled study. Forensic Sci Int 1990;44:187-92.
11. Adamson TO, Malomo IO. Psychological profiles of some armed robbers in Bendel State of Nigeria. Niger J Med 1991;21:41-4.
12. Fatoye FO, Fatoye GK, Oyebanji AO, Ogunro AS. Psychological characteristics as correlates of emotional burden in incarcerated offenders in Nigeria. East Afr Med J 2006;83:545-52.
13. Adesanya A, Ohaeri JU, Ogunlesi AO, Adamson TA, Odejide OA. Psychoactive substance abuse among inmates of a Nigerian prison population. Drug Alcohol Depend 1997;47:39-44.
14. Juvenile Justice Administration. In: The Proceedings of National Conference on Juvenile Justice Administration in Nigeria. Paris: Yves Prigent Penal Reform International; 2003.
15. Borstal Institution and Remand Centre Act. 1962 Chapter 38, 819-67.
16. Goldberg D. The detection of psychiatric illness by questionnaire. London: Oxford University Press; 1972.
17. Black DW, Arndt S, Hale N, Rogerson R. Use of the MINI International Neuropsychiatric Interview (MINI) as a screening tool in prisons: results of a preliminary study. J Am Acad Psychiatry Law 2004;32:158-62.
18. Gureje O, Obikoya B. The GHQ-12 as a screening tool in a primary care setting. Soc Psychiatry Psychiatr Epidemiol 1990;25:276-80.
19. Amoran O, Lawoyin T, Lasebikan V. Prevalence of depression among adults in Oyo State, Nigeria: a comparative study of rural and urban communities. Aust J Rural Health 2007;15:211-5.
20. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry 1998;59:22-33.
21. Ozen S, Ece A, Oto R, Tirasci Y, Goren S. Juvenile delinquency in a developing country: a province example in Turkey. Int J Law Psychiatry 2005;28:430-41.
22. Tarolla SM, Wagner EF, Rabinowitz, J, Tubman JG. Understanding and treating juvenile offenders: a review of current knowledge and future directions. Aggress Violent Behav 2002;7:125-43.
23. Birmingham L. Screening prisoners for psychiatric illness: who benefits? Psychiatr Bull 2001;25:462-4.