



Psychosocial Determinants of Antisocial Behaviours Among Incarcerated Inmates at a Medium Security Correctional Facility in Northeastern Nigeria

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Abstract

The study investigated adverse childhood experiences and cannabis use as determinants of antisocial behaviours of inmates at a medium security prison in north-east, Nigeria. The motivation for the study was due to observed paucity of empirical research on antisocial behaviours and associated risks among inmates in the area, despite anecdotal evidence of persistent involvement of youths in violent and destructive behaviours that violates social norms and expectations. Correlational survey research design was adopted for the study. A sample of 123 inmates were recruited at a Medium Correctional Centre, Biu, through simple random sampling technique. Data collected were analysed using multiple and Linear regression analysis to answer the research questions. Findings of the study revealed that adverse childhood experiences, particularly early experience of parental neglect and sexual abuse predicted future antisocial behaviours. Also, cannabis use among inmates and its interaction with traumatic experiences predicted greater problems. The implication of this result is that early exposure to adverse traumatic events and subsequent involvement in drug use may lead to antisocial behaviours, significantly resulting to security threats and spurt in incarceration with other attendant consequences. Thus, it was recommended, among others, that parents and other stakeholders should provide early support to children who are victims of neglect and sexual abuse to prevent future development of antisocial behaviours and security problems in the northeast region.

Keywords: adverse experiences, inmates, antisocial behaviours

Introduction

Antisocial behaviour, defined as a pattern of behaviour that is verbally or physically harmful to other people, animals, or property, including behaviour that severely violates social expectations or norms, has become a global phenomenon (Khaliq & Rasool, 2016). In recent times, there have been increase in rate of antisocial behaviours among youth worldwide, with deleterious consequences that appear to put the global world on a time-bomb (Carroll, et al., , 2023). Nigeria is not excluded from this ugly trend as recent statistics indicate astronomical rise in rates of antisocial behaviours among her youth (Eze, et al., 2024). According to Nwankwo et al. (2016); Eze et al. (2023), a significant number of school-going youth have indulged in various forms of antisocial behaviours, including but not limited to, stealing, lies telling, runaway tendencies, bullying, smoking, examination malpractices, abortion, rape, and cultism. These behaviours have put substantial burden and risks on the perpetrators, their victims, and Nigeran society in general, necessitating continuous research to identify risks and provide necessary intervention.

Behaviour is considered abnormal or anti-social if it is uncommon, different from the norm and does not conform to what society expects (American Psychiatric Association, 2013). A particular behaviour is not acceptable or is anti-social if any of these three criteria are seen; the behaviour does not allow a person to function effectively with others as members of society, if the behaviour does not permit the person to meet his or her own needs, and the behaviour has a negative effect in the well-being of others. This implies that, though not considered a mental disorder, the capacity of antisocial behaviour to violate societal norms, affect functioning, and cause distress to others, justifies research attention, especially in correctional environment where strict adherence to social norms, rules and harmonious social interaction are the hallmark of efficient operation.

According to the social control theory, individuals who break the law or indulge in antisocial behaviours do so because of a breakdown with their societal bond (Lemert, 1972; Vowell et al., 2017). The theory outlines four dimensions of social bonding as attachment, commitment, involvement, and belief, that prevent people from satisfying natural appetites for pleasure by becoming more sensitive to how others are affected by

their behaviours (Lemert, 1972). For example, high internalization of moral code promotes attachment to one's community, leading to low propensity to commit crime. On the other hand, people who lack commitment and self-control tend to seek immediate gratification, are less committed to the safety and feelings of others and are generally impulsive and self-centred. Thus, due to the uncharitable behavioural manifestation, people with antisocial behaviours have consistently had problems with the law and constitute a significant number of inmates in correctional centres across the world (Mweene & Siziya, 2016).

Although antisocial behaviours are pervasive, extant literature have revealed that these behaviours are more common in incarcerated inmates than the general population (Black, 2015; De Lesi et al., 2019), and have seriously constituted a great challenge to correctional centers operation and inmates' rehabilitation programmes globally (Black, 2015). In the United States (US) for instance, more than 35% of inmates exhibit antisocial behaviours (Black et al., 2015; Hatchett 2022). Similarly, evidence from systematic reviews have shown that, inmates with antisocial problems constitute a nuisance to correctional centers environment and are more likely to re-commit crime after discharge from prison (El-Gilany et al., 2016; Fazer et al., 2002; Gillespie et al., 2018).

In Nigeria, recent insecurity problems and host of other challenges have increased the number of inmates across the correctional centres (Adetunji et al., 2019). Nigeria's population is incarcerated to the tune of over 3 million, according to previous reports from Federal Ministry of Interior in 2023. Incidentally, more than 47% of incarcerated inmates in Nigeria are found to exhibit antisocial or deviant behaviours, which has manifested through consistent pattern of socially irresponsible and morally inappropriate behaviours, including but not limited to, stealing, rule infraction, bullying, aggressiveness, impulsivity, exploitative and remorselessness (Adetunji et al., 2019; Busari et al., 2015). Thus, due to the fast-growing population of inmates with antisocial behaviours and associated unpleasant characteristics, this category of people continues to put pressure on our judicial and correctional system, thus constituting an impediment to effective correctional centers administration and inmates' rehabilitation.

One factor that has the potential to influence antisocial behaviour, but which has received limited research attention among incarcerated offenders, is experiences of childhood trauma. This is often described as serious adverse childhood experiences (ACEs) (Pearce et al., 2019). During the early years of life, children may go through a range of experiences that are classified as psychological trauma; these might include neglect, abandonment, sexual abuse, emotional abuse, and physical abuse, witnessing abuse of a sibling or parent, or having a mentally ill parent (Tafida, Abubakar & Aliyu, 2023). These events have profound psychological, physiological and sociological impacts that may result to deviant behaviours. For instance, one study on adverse childhood experiences determined that traumatic experiences during childhood are a root cause of many social, emotional, and cognitive impairments that lead to increased risk of unhealthy self-destructive behaviours (Kaiser Permanente and the Centres for Disease Control and Prevention, 1998, cited in Tafida et al., 2023). In addition, studies have linked antisocial personality, a related concept with severe trauma history, particularly with high rates of physical and sexual abuse (Bierer et al., 2013; Egeland, et al., 2002), while juvenile delinquency has been specifically associated with parental hostility (England et al., 2002)

According to ecological theory (Bronfenbrenner, 1992), the interaction between various systems in social environment play a significant role in shaping future behaviours. This includes interaction of the microsystem, mesosystem, macrosystem and ecosystem, which may determine future development and behaviours, including prosocial and antisocial behaviours. Thus, experiences of early psychological trauma ranging from sexual abuse, physical abuse, emotional abuse, and neglect, are product of environmental interaction, and according to research, individuals who are exposed to multiple forms of these events stand a higher chance of perpetrating socially unacceptable behaviours compared to those with minimal exposures (Courtois & Fold, 2013). Incidentally, due to prolonged history of insecurity in the northeast, many young people (most of whom are now youth), were unavoidably exposed to multiple forms of adverse experiences that may constitute present antisocial behaviours.

In addition to adverse childhood, research has shown a strong association between crime and substance use. In the US for instance, reports have shown that, in 2014 alone, about one-third (33%) of inmates in state facilities had committed a crime while under the influence of drugs (Mumola, 2016). This underscores the significant link between substance use and delinquency. However, while this is established across many settings including Nigeria (Tafida et al., 2023), most research are focused on general substance and non-incarcerated population, thus ignoring the role of specific psychoactive substances like cannabis whose consumption rate are higher among inmates in northern Nigeria.

The north-eastern Nigeria has been volatile and hostile for over a decade now, which implies that children raised from this environment would most likely experience adverse events ranging from physical abuse, emotional abuse and parental neglect. Likewise, a significant number of youths in northern Nigeria frequently consume cannabis (Armiya'u et al., 2013), which has the capacity to impair cognitive functioning thereby promoting socially deviant and antisocial behaviours. However, despite the potential environmental adversities and increasing cannabis use, which could impair judgement and promote antisocial behaviours among those arrested and incarcerated, research associating these variables are still lacking.

Suffice to state that there have been previous research efforts on antisocial behaviours. However, majority of these studies are either concentrated in the southern region (Busari et al., 2015; Olagunju et al., 2022) or are conducted with non-prison population. As a result, the extent of antisocial behaviors and its associated risks among inmates in northern Nigeria, remains unknown. The aim of the study was therefore to: (1) examine the influence of early traumatic experiences (physical abuse, emotional abuse, emotional neglect, sexual abuse) on antisocial behaviours; (2) examine the influence of cannabis use on antisocial behaviours among inmates; and (3) examine their joint influence on antisocial behaviours among incarcerated offenders of a medium correctional institution in northern Nigeria.

Method

Design

This study adopted a cross-sectional survey research design. This form of design is more appropriate considering the nature of the problem and its ability to provide relevant data that could establish the relationship between antisocial behaviours and its associated risk factors in incarcerated inmates over a short period.

Participants, Sample and Sampling Technique

The total population of inmates at this Correctional Centre at the time of data collection was 195. This constituted the sampling frame. We then employed simple random technique, using Even Numbers. Using this technique, the first inmate with an Even Number was randomly selected from the total inmates listed in the registration book according to the date they were admitted into the correctional centre. We then continued to select one prisoner from the remaining number until the required sample size was reached ($n = 123$). This sampling technique was considered more appropriate to ensure that every participant from the total population had equal chance of participation, thus promoting the validity of results.

Ethical Considerations

This study was duly approved by the authorities of Nigerian Correctional Centre situated in Biu, Borno state. This written approval prompted the researchers to interact and seek verbal consent from the inmates, while also explaining the purpose, objectives, and procedure for data collection to them. In addition, participants were assured of confidentiality and voluntary participation. They were allowed to ask questions on what was unclear to them, and their responses were kept confidential and anonymous. A total of 123 questionnaires were administered for three days using standardised scales that were revalidated with a similar population in a nearby jail. Retrieved data were sorted and analysed.

Measures

Childhood trauma was assessed using a 28-item version of the Childhood Trauma Questionnaire developed by Bernstein (2003). Participants were asked how often they had experienced series of traumatic events when they were growing. The answers were given

in a five (5) Likert-scale: Never (1), Rarely (2), Sometimes (3), Often (4), Always (5). It has both direct scoring and reverse scoring.

This scale has been well validated in Nigeria. A pilot study was carried out on the instrument by Emmanuel et al., (2018) at University of Calabar. The Cronbach alpha coefficient was obtained as 0.80 and internal consistency of the subscales obtained were 0.69 for emotional abuse, 0.60 for physical abuse, 0.60 for sexual abuse, 0.79 for emotional neglect, and 0.21 for physical neglect. However, considering that it has not been well used among inmates, we revalidated the scale using a population of 25 inmates in a correctional center in another state in the north-east, Nigeria, and all the Cronbach alpha reliability coefficients obtained ranged between 0.62 to 0.79.

Cannabis use disorder was assessed using the Cannabis Use Problems Identification Test (CUPIT). This is 16-item self-report scale that assesses cannabis use behaviours across different populations. The scale assesses the frequency, recency and intensity of cannabis use behaviour among youth in the past 12 months. Consequently, participants were asked to indicate how often and the quantity of cannabis they have consumed in the past 12 months. Their responses were computed and analysed. Based on the manual, a score ≥ 12 indicates a cannabis use disorder (Bashford 2010). The reliability of CUPIT in this study was 0.82 (Cronbach's α). This scale has been chosen to assess cannabis use disorder because it has been well validated in similar population (Mac Askill et al., 2011).

Antisocial behaviours were assessed using a 32-item version of the Antisocial Behaviour Questionnaire (Burt & Donnella, 2009). Participants were asked how often they had performed a series of antisocial acts during the preceding 12 months. The answers were given in a five (5) Likert-scale: Never (1), Rarely (2), Sometimes (3), Often (4), Always (5). The scale has good internal consistency and construct validity. The Cronbach alpha reliability index is .77. The internal consistency of the subscales is: Physical aggression (.72), Social aggression (.81), and Rule breaking (.73). Recent Nigerian studies using the instrument to assess antisocial behaviours have reported acceptable reliability and validity among youth population (Eze et al., 2024; Tafida et al., 2023), and our pilot study found overall reliability of 0.76, making it a valid and reliable measure of antisocial behaviours among inmates.

Statistical Analysis

The researchers employed the use of Statistical Package for Social Sciences, Version 23 (IBM Corporation, Armonk, New York, USA) to analyse the data collected. Multiple regression analysis was used to test the influence of adverse traumatic experiences on antisocial behaviours, while Linear regression analysis was used to test the influence of cannabis use on the criterion variable. We also utilised multiple regression analysis to test the joint influence of adverse childhood experiences and cannabis use on inmates' display of antisocial behaviours.

Result

Socio-demographic characteristics of the study participants and prevalence rate

This study was conducted among 123 inmates at the correctional facility, representing about 98.05% response rate. Among those respondents, 106 (86.2%) were male inmates, while 17(13. 8%) were female inmates. The mean (SD) age of respondents was 22.5 years. Majority of the inmates 68 (55.3%) were convicted. Considering religious affiliation, 85 (69.1%) profess Islam, 27(22.0%) Christianity and 11(8.9%) were of other religions. Majority of the inmates 48 (39.0%) have only primary school education, while others 47 (38.2%) and 28 (22. 8%) have attended secondary and post-secondary school education, respectively.

Factors Associated with Antisocial Behaviours

To understand the predictive power of the various adverse childhood experiences on antisocial behaviour of the inmates, we utilized multiple regression analysis as presented in Table 1.

Table 1:***Multiple Regression Showing Prediction of Antisocial Behaviours by Adverse Childhood Experiences.***

Variable: Parenting	β	t	R	R ²	df	F	P
Physical abuse	.11	1.43					>.05
Emotional abuse	.08	1.16	.58	.33	4/118	15.080	>.05
Sexual abuse	.53*	6.18					<.04
Parental neglect	.25*	1.75					<.05

*p<.05; **p<.005

The result as shown in table 1 indicates that adverse childhood experiences are significant predictors of future antisocial behaviours among inmates in Biu [$R=.58$, $R^2=.33$, $F(4,118)=15.080$, $P<.05$]. Specifically, early experiences of sexual abuse ($\beta = .53$, $t= 6.18$, $P>.05$) and parental neglect ($\beta = .25$, $t= 1.75$, $P<.05$) emerged as key adverse experiences with significant contribution to the development of antisocial behaviours among incarcerated inmates in Biu. Physical abuse and emotional abuse were not reported as significant factors. This result resonates with inmates in the study area as due to the insurgency, many of the inmates might have been forcefully abandoned/neglected by their parents, possible risk of sexual abuse which may have resulted to current antisocial behaviours. Thus, the result highlights the long-term effect of trauma on future antisocial problems among inmates in the region.

Table 2:

Linear Regression Showing Prediction of Antisocial Behaviours by Cannabis Use among Participants.

Variable	β	t	R	R ²	df	F	P
Cannabis use	.41*	4.97	.41	.17	1/121	24.708	<.05

*p<.05; **p<.005.

The result in table 2 shows that cannabis use is a significant predictor of antisocial behaviours among inmates in Biu correctional centre ($\beta = .72$, $t = 11.61$, $P < .05$). A further examination of the result and its implication suggest that greater use of cannabis among inmates can consequentially promote negative behaviours, ranging from manipulation, aggressiveness, fighting, stealing and other behaviours that are unacceptable and morally deviant, hence their incarceration.

Table 3:

Multiple Regression Showing Prediction of Antisocial Behaviours by Psychosocial Variables (Adverse Childhood Experiences and Cannabis Use) among Inmates.

Variable: Parenting	β	t	R	R ²	df	F	P
Physical abuse	.10	1.35					>.05
Emotional abuse	.05	.70	.59	.35	5/117	12.683	>.05
Sexual abuse	.47*	4.90					<.04
Parental neglect	.26*	1.75					<.05
Cannabis use	.14*	1.54					<.05

*p<.05; **p<.005

The result in table 3 reveals a significant joint influence of adverse experiences and cannabis use on antisocial behaviours among inmates in Biu ($R = .59$, $R^2 = .35$, $[F(5,117) = 12.683, P < .05]$, accounting for 35% in explaining the variance in antisocial

behaviours reported by the sampled inmates. This result indicates potential interaction, implying that children who experience early trauma and indulge in cannabis are likely to develop antisocial behaviours later in life, making them go against the dictates of morality and law which leads to incarceration.

Discussion

This study examined psychosocial variables as predictors of antisocial behaviours among incarcerated inmates in Biu, Borno state. The motivation for the research was predicated by observed lack of domestic research assessing antisocial behaviours and their associated risks among inmates in northern Nigerian despite a plethora of anecdotal evidence of their existence. Consequently, we examined whether early experiences of physical abuse, emotional abuse, sexual abuse, parental neglect and current cannabis use could influence antisocial behaviour in 123 randomly selected inmates that were assessed in the cross-sectional survey.

Consistent with prior research in similar population, we found that inmates total scores were significantly associated with greater abuse histories. Specifically, those with higher scores on antisocial behaviours measure reported substantial adverse events, including early sexual abuse and parental neglect. This means that inmates who had these traumatic experiences tended to display more reported antisocial behaviours, ranging from theft, destruction of lives and property, aggressive behaviours, smoking, examination malpractices, abortion, rape, and cultism. Thus, the result supports the works of Ameel and Yassen (2020), Finkelhor, et al., (2017), Lansford et al. (2017), Tafida et al. (2023), and Weider and Widom (1996). For instance, Weider and Widom (1996) reported that childhood abuse and/or neglect increases the risk of developing psychopathic features, which consequently results in an increased risk for engaging in violent and aggressive behavior. This therefore emphasizes the long-term effects of traumatic experiences on future behavioural problems.

Although other traumatic experiences, such as physical abuse and emotional abuse did not predict antisocial behaviours, which contradict many previous studies (Bierer et al., 2013; Egeland, Yates, Appleyard, & Van Dulmen, 2002; Tafida et al., 2023), it must be noted that these adverse experiences are potential risk factors to delinquency and should not be

ignored when designing interventions. For instance, Ameel and Yassen (2020) believes traumatized children are presumed to exhibit antisocial behaviour in the society, suggesting that the insignificant result should not undermine the strength of physical and emotional abuse in antisocial behaviours. The disparities may be due to methodological defects and sociocultural variations, considering that most participants were from the conservative north where cultural and religious influences may discourage response to actual socially unacceptable behaviours.

Furthermore, we found that cannabis use predicted antisocial behaviours of the inmates. The result of linear regression showed a positive Beta value ($\beta = .41, t = 4.97$), implying that inmates whose scores were significantly higher on CUPIT also scored higher on antisocial behaviour, which is consistent with research findings of Mumola (2016) and Hawkins et al. (2017) that delinquent behaviour is strongly associated with substance use. The result also aligns with studies in Ethiopia (Seid et al., 2022), Iowa, USA (Black et al., 2010), Egypt (El-Gilany, 2016) and South Africa (Naidoo et al., 2012), that have linked substance use with antisocial personality disorder, which shares similarities with antisocial behaviours. Thus, consistent with studies linking antisocial behaviours with psychoactive substance use among Nigerian youth (Eze et al., 2024; Tafida et al., 2023), this study has provided additional literature on the influence of cannabis use on antisocial behaviour among incarcerated population.

Conclusion

This research has found the presence of antisocial behaviours in incarcerated inmates in northern Nigeria and the psychosocial factors responsible for these socially unacceptable behaviours. Particularly, experiences of parental neglect and sexual abuse predicted antisocial behaviours of the inmates. Likewise, inmates with hazardous cannabis use reported more indulgence in these behaviours. This has far-reaching implications for prison administration, security management and caregiving by relevant stakeholders. Undoubtedly, because of insurgency, a substantial number of individuals have been exposed to a sequelae of traumatic events over the years, many of whom are also habitual cannabis users (Armiya'u et al., 2013). However, while these potential risks, domestic

empirical research to validate these association have been lacking. With this finding, prison administrators, relevant government agencies and parents will be informed on prevention and management of antisocial behaviours. This can be done by early identification of vulnerable groups, particularly the displaced/ neglected children who may become vulnerable to sexual abuse and initiation into drug use, thus posing a serious security threat.

Limitations

This study is without some limitations. One major limitation is the cross-sectional survey design adopted, which lack causal information and might have led to response biases. Also, the percentage of female inmates was low compared to their male counterparts, which could also affect a balanced gender representation. Other limitations were limited sample, single-setting assessment. Nevertheless, the research has identified key factors that may be contributing to antisocial behaviours and by extension, the persistent insecurity in the northeast and thus created a pathway for management of antisocial behaviors and insecurity in the region.

Recommendations

Based on the findings of this study, the researchers put forth the following recommendations to curb the menace of antisocial behaviour among inmates in the region and beyond.

1. Parents should always create a conducive environment at home so that children will not feel neglected and abandoned. This will go a long way in establishing early bond, trust and love in the parents and larger society.
2. Government must act fast on the increasing number of displaced children in the region. Skill-acquisition centres and other educational programmes should be established to engage these youths so that the impact of war-induced parental neglect on antisocial behaviours can be minimized.
3. Government must put mechanism for punishing paedophiles who exploit vulnerability of young and displaced female children in the region.

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4. Proper discipline and punishment should be given to young people found to be using illegal drugs. Similarly, people who sell these psychoactive substances must be banned to prevent youth from having access to them.

References

- Ameel, F. A., & Yaseen, T. S. (2020). The relationship of childhood maltreatment to deviant behaviours among Iraqi adults. *Trauma and Mental Health*, 68 (7);14-25
<https://doi.org/10.1177/002076>
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington (VA): American Psychiatric Association.
- Armiya'u, A. Y., Audu, M. D., Obembe, A., Adole, O., & Umar, M. U. (2013). A study of psychiatry morbidity and co-morbid physical illness among convicted and awaiting trial inmates in Jos prison. *Journal of Forensic Legal Medicine*, 20, 1048-51.
- Bashford, J, Flett, R., & Copeland, J. (2010). The cannabis uses problems identification test (CUPIT): development, reliability, concurrent and predictive validity among adolescents and adults. *Addiction*, 105, 615–25.
- Black, D. W. (2015). The natural history of antisocial personality disorder. *Canadian Journal of Psychiatry*, 60, 309-14.
- Bronfenbrenner, U. (2005). Ecological systems theory (1992). In U. Bronfenbrenner (Ed.), *Making human beings human: Bioecological perspectives on human development* (pp. 106–173). Sage Publications Ltd.
- Busari, A. (2015). Antisocial personality disorder among prison inmates: the mediating role of schema-focused therapy. *International Journal of Emergency Mental Health Human Resiliency*. 17, 327–32.
- Carroll, S. L., Mikhail, M. E., & Burt, S. A. (2023). The development of youth antisocial behavior across time and context: a systematic review and integration of person-centered and variable-centered research. *Clinical Psychology Review*, 101, 1022-53.
- Courtois, C. A., & Ford, J. D. (2013). *Treating complex traumatic stress disorders: an evidence-based guide*. New York: Guilford Press.

-
- DeLisi, M., Drury, A. J., & Elbert, M. J. (2019). The etiology of antisocial personality disorder: the differential roles of adverse childhood experiences and childhood psychopathology. *Comprehensive Psychiatry*, 92, 1-6.
- Egeland, B., Yates, T., Appleyard, K., & Van-Dulmen, M. (2002). The long-term consequences of maltreatment in the early years: a developmental pathway model to antisocial behavior. *Children's Services: Social Policy, Research, and Practice*, 5(4), 249–260.
- El-Gilany, A. H., Khater, M., Gomaa, Z., Hussein, E., & Hamdy, I. (2016). Psychiatric disorders among prisoners: a national study in Egypt. *East Asian Archives Psychiatry*, 26(1), 30–38.
- Emmanuel, E., Godwin, A., Olusola, R. A., & Effiong, E. U. (2018). The Childhood trauma questionnaire: validity, reliability and factor structure among adolescents in Calabar, *Nigeria. Journal of the National Association of Resident Doctors in Nigeria*. Doi: 10.4103/1115-2613.278787
- Eze, O. E., Onwe, F., Nwonyi, S., Oselebe, C. C., & Diogu, M. A. (2024). Personality trait, gender and substance use as predictors of antisocial behaviour among undergraduates in Ebonyi State University, Abakaliki. *African Journal of Politics and Administrative Studies AJPAS*, 17(1), 815-831.
- Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23,000 prisoners: a systematic review of 62 surveys. *Lancet*, 359, 545-50.
- Finkelhor, D., Turner, H., Ormrod, R., Hamby, S., & Kracke, K. (2017). *Children's exposure to violence, a comprehensive national Survey*. Bulletin, Washington, DC: US Department of Justice - Office of Justice programs, office of Juvenile Justice and Delinquency Prevention.
- Gillespie, N. A., Aggen, S. H., Neale, M. C., Knudsen, G. P., Krueger, R. F., South, S. C., *et al.* (2018). Associations between personality disorders and cannabis use and cannabis use disorder: a population-based twin study. *Addiction*, 113, 1488-98.
- Hatchett, G. T. (2022). Treatment guidelines for clients with antisocial personality disorder. *Journal of Mental Health Counselling*, 37, 15-27.

-
- Hawkins, D.J., Rhew, C.I. & Monahan, C.K (2017). Adolescent pathways to co-occurring problem behaviour: The effects of peer delinquency and peer substance use. *Journal of Research on Adolescent*, 24(4);10-21.
- Khaliq, A., & Rasool, S. (2016). Causes of students' antisocial behavior at secondary level schools. *Faisalabad-Pakistan*, 4(1), 14-23.
- Lemert, E. M. (1972). *Human deviance, social problems and social control (2nd ed.)*. Englewood Cliffs, NJ: Prentice-Hall.
- MacAskill, S., Parkes, T., Brooks, O., Graham, L., McAuley, A., Brown, A. (2011). Assessment of alcohol problems using AUDIT in a prison setting: more than an 'yes or no' question. *Public Health*, 11(1), 865.
- Mumola, C. J., & Karberg, J. C. (2016). *Drug use and dependence, state and Federal prisoners, 2004*. Washington, DC: US Department of Justice, Office of Justice Programs.
- Mweene, M. T., & Siziya, S. (2016). Prevalence of mental illness among inmates at Mukobeko maximum security prison in Zambia: a cross-sectional study. *Journal of Mental Health and Human Behaviour*, 21(2), 105.
- Naidoo, S., & Mkize, D. (2012). Prevalence of mental disorders in a prison population in Durban, South Africa. *African Journal of Psychiatry*, 15(1), 30-45.
- Nwankwo, B. O., Nwoke, E. U., Chukwuocha, U. M., Obanny, A. O., Nwoga, K. S., Nlwuagwu, U. O., & Okereke, C. (2016). Prevalence and predictors of antisocial behavior: a cross sectional survey of adolescents in secondary schools in Owerri Municipal, South East Nigeria. *Pakistan Journal of Social Sciences*, 7(2), 129-139.
- Olagunju, A.T., Bioku, A.A., Poluyi, C., Abdullahi, I., Olagunju, T.O., Alatishe, Y.A., & Kolawole, O.F, (2022). Substance Use Disorders and Antisocial Personality Disorder among a Sample of Incarcerated Individuals with Inadequate Health Care: Implications for Correctional Mental-Behavioural Health and Addiction Services. *Journal of Mental Health Care*, 33(3):1401-1418. doi: 10.1353/hpu.2022.0120. PMID: 36245171.
- Pearce, J., Murray, C., & Larkin, W. (2019). Childhood adversity and trauma: *experiences of professionals trained routinely enquire about childhood adversity*. <https://doi.org/10.1016/j.heliyon.2019.e01900>

-
- Tafida, A. M., Abubakar, S. A & Aliyu, O. A. (2023). Childhood trauma and substance use as predictors of antisocial behaviours among adolescents in Lafia metropolis. *African Journal of Social and Behavioural Science*, 2, 325-341.
- Vowell, P. R. (2017). A partial test of an integrative control model: neighbourhood context, social control, self-control, and youth violent behaviour. *Western Criminology Review* 8,1-15.