

Innovations

Adverse Childhood Experiences, Attention Deficit Hyperactivity Disorder and Offending Behaviour among Correctional Facility Inmates in Southwest, Nigeria

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Abstract

Nigeria is one of the top twenty least tranquil countries in the world due to its high offending rates. Adverse Childhood Experiences (ACE) and Attention Deficit Hyperactivity Disorder (ADHD) are often cited as risk factors for offending behaviour. Research on their prevalence and association is of major importance for early intervention and reduction in the rate of offending in Nigeria. Therefore, the goal of this research was to find out the prevalence of ACEs and ADHD, and the associations among ACEs, ADHD and offending behaviour among inmates in Southwest, Nigeria. A cross sectional research design was adopted. The Adverse Childhood International Questionnaire (ACE-IQ), Adult ADHD Self-reported Screener Version 1.1 (ASRS-V 1.1) and Self-Reported Delinquency Scale were adopted and administered to 307 inmates in Southwest Nigeria. Results shows that, 182 (59.3%) had experienced one or more childhood adversity while 16 (5.3%) screened positive for adult ADHD. ACEs and ADHD explained 35% variance in offending behaviour. The study shows that ACEs and ADHD are prevalent risk factors among the inmates and might have moderating effect on the course of offending behaviour. The study made relevant contributions and suggestions for further studies.

Keywords: *Adverse childhood experiences, Attention Deficit Hyperactivity Disorder, Offending Behaviour, Inmate*

Offending Behaviour is any behaviour or act that is in violation of the criminal law of a state or country (Palmer, 2003). According to Gottfredson and Hirschi (1990), offending behaviour is a type of behaviour defined by a lack of self-control, self-centeredness, and consideration for the pain and needs of others. Offending behaviour, especially aggressive and antisocial behaviour, is viewed as a significant social issue having multiple root causes. Several aspects of the sociological, psychological, and ecological elements are known to increase the likelihood of engaging in offending acts. Low academic achievement, a poor diet, low self-esteem, insufficient housing, a high degree of social disparity, impoverishment, and recklessness among others are all related factors (Stevens, 2018). The primary goal of this investigation is on two psychological and social risk factors for engaging in offending behaviour, specifically Adverse Childhood Experiences (ACEs) (physical violence, sexual assault, verbal abuse, emotional neglect, physical neglect and dysfunction in the home) which subdomains consist of both psychological and social factors, and Attention Deficit Hyperactivity Disorder (ADHD), which is identified as a psychological factor that could build and maintain offending behaviour (Buitelaar & Ferdinand, 2016; Levenson, 2017; Baggio et al., 2018).

Adverse childhood experiences are traumatizing occurrences that could have negative effects on health for a long period of time. (Felitti et al., 1998; Campbell, Walker & Egede, 2016). ACEs include mental, bodily, and sexual molestation along with instability in the family (including domestic abuse, substance misuse, psychosis, criminal acts, and parental divorce or separation); they too are classified as ACEs if they occurred before age 18 (Felitti et al., 1998; Dube, 2001). Childhood adversity is frequently chronic and recurrent, with a high susceptibility to inflict injury. ACEs research has found that multiple types and severity of childhood adversities are linked to worsened clinical results (Centers for Disease Control and Prevention, 2019). Adolescent emotional and behavioural difficulties are increasingly being considered a result of ACEs trauma (Hughes et al., 2017; National Academies of Sciences, Engineering, and Medicine, 2019).

Juvenile and adult criminal arrests have been shown to be significantly influenced by childhood ignorance and maltreatment which are types of childhood adversity (Maxfield & Widom 1996). Indicating a history of at least one traumatic occurrence, the majority of juvenile offenders report having had one in the past (Ford, 2012; Moore, Sunjic, Kaye, Archer & Indig, 2013). Numerous studies have revealed that kids who go through abuse and dysfunctional families have the tendency to become criminals as adults than children who do not experience these things (Topitzes, Mersky, & Reynolds, 2012). Victims of maltreatment as kids are more susceptible to resort to violence as they grow up and into adulthood (Sethi, Hughes, Bellis, Mitis & Racioppi, 2010).

Attention Deficit Hyperactivity Disorder is a neurodevelopmental disorder that impacts functioning or growth and is characterised by either attentional impairment, impulsive or hyperactive conduct, or perhaps both (American Psychiatric Association 2013). ADHD is a brain development condition that affects 5 percent of children and 2.5 percent of adolescents globally (Faraone et al., 2015; Demontis et al., 2019). Impulsive behaviour, loss of concentration, and restlessness are hallmarks of Attention Deficit/Hyperactivity Disorder (ADHD), which affects over 50% both kids and elderly (Faraone et al., 2015; Franke et al., 2018). According to the DSM-V, people with ADHD have impulsivity and persistent hyperactivity.

Numerous studies have revealed that people with ADHD are more inclined to breach the law and exhibit delinquent conduct overall. There is a five to tenfold increased risk for ADHD in juvenile and

adult detention samples based on recent metaanalyses, which show 26–30% incidence rate among adolescent and adult samples (Young, Moss, Sedgwick, Fridman&Hodgkins, 2015, Baggio et al., 2018). These patients are thought to have eight times the difficulty navigating the legal system as the average person; therefore, it is critical that they are properly diagnosed and treated (Sanaei-Zadeh, Emamhadi, Farajidana, Zamani&Amirfarhangi, 2013). A 15-year assessment of juvenile offenders found that ADHD sufferers had a greater rate of criminal re-offending than those without the disorder (Philipp-Wiegmann, Rösler, Clasen, Zinnow, Retz-Junginger& Retz, 2018).

Nigeria is thought to have a high prevalence of crime, as it is ranked 17th among the least peaceful nations in the world (Statista, 2021). In recent years, crime has plagued Nigerian society. Assault, abduction, manslaughter, theft, fraud, terrorist acts, robberies, online fraud, extortion and corruption, embezzlement, and other serious crimes are common in Nigeria (Oguntunde, Ojo, &Okagbue, 2018). The high costs of crime include, among other things, the severe suffering endured by victims, the lack of peace and fear in the hearts of the populace, and the deterrent effects it has on investment, growth, and sustainable development. Therefore, it is essential to recognise and expose the causes of crime in Nigeria society, to proffer solutions and reduce the rate of offense in the country.

Evidence from body of research in other western countries has found connections among these variables, ACES, ADHD and offending behaviour. Offenders who possess a diagnosis of ACES or ADHD at an early point in their criminal development are more likely to get appropriate interventions that will help them avoid a criminal trajectory, which can be of a great benefit to the nation at large and make our society a safer place. We can learn vital information about how to prevent and adjust delinquent and disparaging actions if we can recognize differences and factors that emerge throughout the expression patterns of existence that divert a person away from having compassion, considerate, and altruistic along with those that deflect a person away from the path of repetitive and severe behavioral problems. Hence, it is imperative to carry out research on this subject topic.

In order to reduce the rate of crime, inform appropriate management or intervention in correctional facilities in Nigeria, it is vital to determine the incidence of ACES and ADHD on offending behaviour among inmates. It is critical to conduct study on this topic in order to lower the rate of offending and reoffending among jailed people and reduce the harmful effects of ACES and ADHD. This study therefore will examine the prevalence of ACE, ADHD and if ACE and ADHD are determinants of offending behaviour.

Methods

For this investigation, a cross-sectional study design was used. This is due to the fact that data on these variables (Adverse Childhood Experiences, Attention Deficit Hyperactivity Disorder and Offending Behaviour) was gathered at one point in time from the inmates. 307 inmates from Nigeria Correctional Facilities in Ibara Custodial Center, Abeokuta and Agodi Custodial Center, Ibadan participated in this study.

Instruments

The Adverse Childhood Experiences (ACE) Scale

A self-report questionnaire called the Adverse Childhood Experiences (ACE) scale (Felitti et al., 1998) was adopted in this study, it has ten dichotomous (yes/no) items with a total score that ranges from 0 (no ACEs on the scale) to 10 (having experienced all 10 ACEs). The ACE scale consists of five items for child abuse (emotional, physical, sexual, and physical neglect) and five items for household

dysfunction (parental separation/divorce, family/domestic violence, substance abuse in the home, mental illness in the home, and incarceration in the home).

The ACE scale has strong test-retest reliability, according to a number of earlier studies (Dube et al., 2004; Pinto, Correia, & Maia, 2014; Mersky et al., 2017). Internal scale consistency for the overall ACE score was 0.79 (Cortina, 1993) and in line with previous reliability estimates by Easton, 2012. The child maltreatment and household dysfunction scores had internal scale consistency of 0.73 and 0.64, respectively. The Cronbach's alpha of ACE questionnaire for the current study was 0.88.

Adult ADHD Self-Report Checklist Version 1.1 (ASRS-V 1.1)

The ASRS-V 1.1 (Kessler et al., 2005) is a tool that incorporates the Diagnostic and Statistical Manual of Mental Disorders' criteria (DSM-IV-TR; American Psychiatric Association, 2000), this checklist was adopted in measuring adult ADHD. It has 18 items, half of which are for inattention symptoms and the other half for hyperactive/impulsive symptoms, and participants report the frequency of each item in the last 6 months using a 5-point Likert-type scale ranging from 0 (never) to 4 (often) (very often). It is split into two sections when used as a clinical tool: Part A of the Symptom Checklist has six items that have been found to be the most predictive of ADHD symptoms, while Part B contains the remaining 12 questions.

If more than four out of the six items rate affirmatively, only the former is used to classify persons as having ADHD. To classify participants in this study as having ADHD, only the Part A portion of the symptom checklist will produce favorable results. The total score that can be earned for the complete survey ranges from 0 to 24. The ASRS scale's internal consistency reliability coefficient in the present study was 0.84.

Self-Reported Delinquency Scale

According to Elliot et al, (1985) Self Report Delinquency scale indicates levels of several types of delinquency, this scale was adopted in this study. The scale consists of 24 items, which examine frequency of minor delinquent acts, as well as more serious types of delinquent behavior, and is said to measure the full range of delinquent activity. Responses are scored by the individual listing the number of times he or she has engaged in an activity in the last six months. This scale had a Cronbach's alpha of 0.93 in validation study. This measurement has been applied to many different demographics and is the one that is most frequently used to describe criminal conduct. It takes around 10 minutes to administer using a paper and pencil alone equipment. The SRD Scale's internal consistency reliability coefficient in the present study was 0.97.

Results

This chapter presents the results of findings from the data analysed. The findings will be used to proffer solutions to the research hypothesis raised in the study. The study's primary aim was to assess Adverse Childhood Experiences and Attention Deficits Hyperactivity Disorder as determinants of Offending behaviour among correctional facility inmates in Southwest Nigeria. Out of three hundred and twenty questionnaires (320) distributed amongst the inmates, only three hundred and seven was retrieved from the correctional facilities. The begins with a description of the participants' demographic information. Subsequently, the quantitative data will be represented for each research questions and research hypothesis.

Demographic Data

Table 1 Characteristics of the study sample (n = 307)

Variables	N	%
Gender		
Male	250	81.4
Female	57	18.6
Age		
18-27years	38	12.4
28-35years	112	36.5
36-44years	87	28.3
45years & above	67	21.8
Level of Education		
WAEC or below	134	43.6
OND	99	32.2
B.Sc/HND	44	14.3
Postgraduate & above	11	3.6
Marital Status		
Single	100	32.6
Married	167	54.4
Divorced/Separated	30	9.8
Religion		
Christian	196	63.8
Muslim	100	32.6
Others	6	2.0
Ethnicity		
Yoruba	189	61.6
Igbo	70	22.8
Hausa	23	7.5
Others	15	4.9

Presentation of Results

Research Question One: what is the prevalence of ACEs among Inmates?

Table 2

Prevalence of each adverse childhood experience in the sample and adverse childhood experiences counts

ACEs	N	%
Did you experience any of the following before the age of 18years?		
Verbal abuse	120	39.1
Physical abuse	108	35.2
Sexual abuse	84	27.4
Emotional neglect	111	36.2
Physical neglect	93	30.3
Parent’s divorce or separation	107	34.9
Mother a victim of domestic violence	80	26.1
Alcoholic parent	103	33.6
Family member diagnosed with mental illness	64	20.8
Family member incarcerated	78	25.4
ACE counts		
0	113	36.8
1	19	6.2
2	13	4.2
3	19	6.2
4+	131	42.7
ACEs Exposure		
Yes	182	59.3
No	113	36.8

The prevalence of adverse childhood experiences in the inmates was recorded in table 2 It reveals that 39.1%(120) of the inmates reported Verbal Abuse, 35.2%(108) reported experiencing Physical abuse, 27.4%(84) experienced Sexual abuse, 36.2%(111) experienced Emotional neglect, 30.3%(93) experienced physical neglect, 34.9%(107) reported Parent’s divorce or separation, 26.1%(80) reported that their mother was a victim of domestic violence, 33.6%(103) had Alcoholic parents,

20.8%(64) reported to have had a family member diagnosed with mental illness and 25.4%(78) reported to have had a family member in jail. The ACEs with the highest number of occurrence is Verbal abuse, followed by Sexual abuse, Physical abuse, Parent’s divorce or separation, Alcoholic parent, Physical neglect, Sexual abuse, Mother was a victim of abuse, and a close relative is in bars. and the least is a family member diagnosed with mental illness.

The table also shows the ACEs count for the sample population. A total number of 113 (36.8%) inmates reported no history of adverse childhood experiences with 0 ACEs count, 19 (6.2%) inmates reported to have experienced one (1) ACEs, 13 (4.2%) inmates reported to have experienced two (2) ACEs, 19(6.2%) inmates reported to have experienced three (3) adversity in childhood and 131(42.7%) inmates reported to have experienced four to ten (4-10) ACEs. Inmates who had experienced four to ten ACEs had the highest percentage, followed by those with zero history of adversity in childhood.

Finally, the table reveals the total number of inmates who responded yes or no to the ACEs items. A total number of 182 inmates response was Yes while a total number of 113 inmates response to ACEs items was No. That is a total number of 182 inmates had experienced at least one adversity in childhood.

Research Question Two: What is the prevalence of ADHD among the inmates

Table 3

Prevalence of Attention Deficits Hyperactivity Disorder

ADHD Score	N	%
<14 (Absence)	281	91.7
≥14 (Presence)	16	5.3

Table 3 shows the number of inmates who had the symptoms of ADHD and those who do not. It reveals that 91.7% (281) of the inmates had no symptom of adult ADHD based on the checklist score while just 5.3% (16) of the inmates had the symptoms of adult ADHD. Majority of the inmates did not meet the diagnostic criteria for adult ADHD.

Research Hypothesis: ACEs and ADHD are not significant predictors of Offending Behaviour

Table 4

Regression Coefficients of Adverse Childhood Experiences and Attention Deficit Hyperactivity Disorder on Offending Behaviour

Variables	B	SE	T	p	95%CI
Constant	1.06	0.046	23.22	0.000	[0.973,1.15]
ACES	0.875	0.085	10.34	0.000	[0.709,1.04]
ADHD	0.109	0.036	3.02	0.003	[0.038,0.180]

Note: $R^2=.35$; $F(307) = 80.52$, $p<.001$

Table 4 shows the impact of Adverse Childhood Experiences and Attention Deficit Hyperactivity Disorder on Offending behaviour among inmates. The R^2 value of 0.35 found that the determinants accounted for 35% of the variability in the outcome measure with $F(307)=80.52, p<.001$. The findings revealed that Adverse Childhood Experiences positively predicted offending behaviour ($\beta= 0.52$, $p<.001$) and Attention Deficit Hyperactivity Disorder positively predicted offending behaviour ($\beta= 0.15$, $p=.003$).

Discussions

One of this study's objectives is to better understand the incidence of ACEs among Nigerian correctional facility inmates. As a result, this study concentrated on ten factors from the two categories of ACEs (Felitti et al., 1998). According to the findings of this study, two-thirds of offenders had at least one form of ACEs before the age of 18, whereas the remaining one-third had no childhood adversity experiences. The findings of this study, strongly imply that inmates who had experienced verbal abuse had the highest percentage of occurrence, followed by those who had been emotionally neglected, then physical abuse, parent's divorce or separation, substance abuse in the home, physical neglect, sexual abuse, domestic violence in the home, incarceration of a family member, and mental illness in the home had the lowest percentage of the occurrence.

One implication of this is that adversity in childhood may be a key risk factor for inmates participating in criminal behaviour. This is consistent with the majority of the ACE identified in the literature as prevalent in the prison population. For example, research has indicated that inmates who were sexually molested as children are more likely to commit sexual offences. Inmates who were physically abused as children or experienced domestic violence in the home are more prone to abuse and maltreat others, particularly their partners (DeLisi & Beauregard, 2018). However, there is currently no definitive proof of a causal link between the type of offence and the type of adversity encountered in childhood; the study merely sought to determine the prevalence of ACE in this cohort. Over half of the inmates who participated in this study reported having four or more ACEs, which is an additional intriguing result. The milieu from which most offenders came predisposes them to poor life events, as contrasted to those who come from better family situations or environments that limit such occurrences (Chang, Jiang, Mkandarwire & Shen 2019; Crouch, Probst & Radcliff, 2019). These findings support the assumption that offenders, particularly those incarcerated, face more adversity in childhood than the general population. The ACE ratings of convicted sex offenders are much

higher than those of the general male population (Reavis, 2013). This finding may also be explained by the notion that some ACEs, including verbal and physical abuse, are used by Nigerians to discipline their children and correct maladaptive behaviour.

The result emphasises the significance of providing healthier and more comfortable environments for children in Nigerian society as they grow up to avoid the long-term negative impacts of childhood adversity in adulthood. As ACE scores rise, so do drug abuse, depression, heart and pulmonary ailments, liver disease, intimate partner violence, sexually transmitted infections, and unwanted pregnancies (Felitti et al., 1998). This also implies that not all incarcerated offenders were predisposed to adversity in childhood, even though the majority of inmates come from the same background. ACEs have been established to influence involvement in offending behaviours, but not all inmates are involved in offending behaviour because they experienced adversity in childhood. As a result, there are more factors to consider as predisposing these persons to engage in criminal behaviour.

The findings of this research on the prevalence of adult ADHD among the inmates in the correctional facility highlights that just a few of the inmates met the criteria for adult ADHD diagnosis. Whereas past researchers have found that the prevalence of ADHD in juvenile and adult detention populations ranges between 26 and 30 percent, indicating a five- to tenfold risk relative to the general population (Young et al., 2015; Baggio et al., 2018). Among comparison to the general population, the estimated mean prevalence of ADHD in jailed populations is 25.5 percent, with no gender or age disparities (Young et al., 2015).

One interpretation for this finding is that the only means of assessment was through inmates' perception of ADHD symptoms. The inmates may not identify their inability to pay attention to task, sit in a place, remember events or things and so on as significant. Inmates sometimes need excessive energy to carry out their criminal activities and so they may not give valid responses. Subjective symptomology is not verifiable because it is only according to the data the inmates' presented by responding to the adult ADHD checklist. Therefore, using a battery of adult ADHD tests and observation might yield a different result.

Most of the inmates that participated in this study are within the age bracket of 28 years and above, therefore, this data may be justified by the notion that the majority of offenders exhibit ADHD symptoms throughout their childhood and adolescence and did not persist until adulthood or the frequency of ADHD symptoms reduces as they age. Although research suggest that symptoms of ADHD persist until adulthood, some authors reported that adult ADHD symptoms reduces with age in offending population (Rosler, 2010; Farooq et al., 2016).

Previous research has connected childhood adversity and ADHD to criminal behaviour among convicts (De Sanctis et al., 2014; Turner et al., 2020). The purpose of this research was to have a deeper knowledge of the consequences of ACE and ADHD on offending behaviour. According to this study, inmates who had one or more adversities in childhood and displayed indicators of ADHD had higher rates of offending. This is not surprising given that early hardship has been linked to ADHD symptoms, and both factors predispose people to committing crimes. ACEs are prevalent amongst criminals and have also been associated to ADHD as well as the development and persistence of delinquency (Fuller-Thomson & Lewis, 2015; Bjorkenstam et al., 2018).

As a result, an inmate with one or more ACE scores and a diagnosis of ADHD is likely to commit a crime. Individuals who have experienced physical, verbal, or sexual abuse, physical or emotional neglect, and/or household dysfunction are more prone to develop some mental health conditions, one of which is ADHD. Similarly, persons diagnosed with ADHD are more likely to face one or more

childhood adversities. Both ACE and ADHD have a substantial impact on inmates who commit crimes. A longitudinal study of ADHD children found that moderate to severe childhood abuse increased the chance of future arrests (De Sanctis et al., 2014).

These findings show the combined influence of negative childhood experiences and ADHD on offending in an adult prison population. There have been few studies to show a link between these three characteristics in adult jail populations; the majority of material focuses on adolescent and juvenile delinquents (Barra et al., 2020). According to this findings, ACES predicted offending behaviour better than ADHD, which can be related to the fact that two-thirds of the offenders had suffered one or more childhood adversity, but only a few fit the criteria for adult ADHD.

Conclusion

The findings of this study add to the understanding of the roles played by experiencing adversity in childhood and being diagnosed with ADHD in the offending rates of inmates in Nigeria. There is a high prevalence of ACE among inmates as two-third reported to have experienced at least one childhood adversity and some of them had symptoms of ADHD. The outcomes underline the importance of ACE and ADHD intervention for inmates to curb the rate of offending and re-offending in Nigeria. Moreover, to protect Nigeria from increasing crime rate or future crimes, reduce the economic costs of offending behaviours and allow inmates and individuals at high risk of engaging in crime to develop functional and a life free from crime, practitioners in Psychiatry, Law enforcement and Psychology along with politicians, must collaborate to design and implement suitable policies and programs for this group of individuals in the society. However, a larger sample representative of Nigeria's inmate population across the six geo-political zones should be considered to establish the nationwide prevalence of ACE and ADHD. Also, this will aid the generalization of results findings and the ability to develop nationwide policies to eradicate the impact of ACE and provide interventions for ADHD.

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