

Influence of Codeine and Toluene Abuse on Criminal Behaviour among Youths in Minna Metropolis, Niger State, Nigeria

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Abstract

Criminal behaviour has increased in recent years in Nigeria. Violent crimes have graduated from the common petty offences to sophisticated crimes of mass killings, banditry, kidnapping, armed robbery to bombing activities across the landscape. This study investigated the influence of Codeine and Toluene abuse on criminal behaviour among youths in Minna, Niger State, Nigeria. A cross-sectional survey design was used in this study. Two Local Government Areas were purposively selected while accidental sampling technique was used to select 249 youths (154 males, 95 females) with age ranges from 15-35 years to respond to two adapted questionnaires: The Alcohol Abuse Disorders Identification Tests (AUDIT) and Comprehensive Misconduct Inventory (CMI) 58 (Update F). Data collected were screened, coded and analysed using SPSS Version 23. Descriptive statistic and t-test of independent sample means were used to summarize the data where the value of p

<.05 was considered significant. The results indicated that prevalence of Toluene abuse among youths in Minna was 33.7% and Codeine 20.5%. The results further showed a significant difference in criminal behaviour between youths who abused Toluene and those who did not abuse Toluene [$t(199) = -4.991, p <.05$]. However, there was no significant difference in the level of criminal behaviour between youths who abused Codeine and those who did not abuse Codeine [$t(199) = -.159, p >.05$]. The study concluded that Toluene and Codeine abuse among youths tend to be progressively high in the study population. The study recommended that more attention should be given toward the possession, sale and abuse of Codeine and Toluene among youths by both law enforcement agencies and health institutions in Niger State and Nigeria.

Keywords: Codeine, Toluene, Substance abuse, Criminal Behaviour, Minna/Nigeria

Introduction

Criminal behaviour is any kind of antisocial behaviour which is punishable by laws or norms as stated by the society. These behaviours range from offences such as bullying, domestic violence, stealing, pick-pocket to sophisticated crimes of mass killings, banditry, kidnapping, armed robbery, bombing activities, etc. Psychologists have confirmed that criminal behaviour is caused by nature and nurture (Ikoh et al., 2019). The nature causes of criminal behaviour is attributed to individuals' genetic makeup while the nurture causes of criminal behaviour emanated from the environment in which individuals were brought up (Ikoh et al., 2019).

One of the nurture causes of criminal behaviour is when individuals come in contact with, used and abused substances (or drugs). The World Health Organisation (WHO, 2014) defines substance abuse as the harmful or hazardous use of psychoactive substances which include alcohol and other illicit drugs. In the context of this study, substance abuse is described as when an individual takes non-prescribed drugs to the extent that the individual becomes dependent on such drugs so much that it causes the individual to commit crimes.

The prevalence of drug abuse in Nigeria is estimated at 14.4% or 14.3 million among people aged between 15 and 64 years (Olanrewaju et al., 2022). One of the drugs commonly used and abused in Nigeria investigated in this study is Codeine which is an opiate medically prescribed to treat pain, cough and diarrhoea (Akande -Sholabi et al., 2019). Codeine as a depressant causes drowsiness, impaired judgment, blocked speech, causes confusion and loss of coordination to the users. It contains a small amount of narcotics. According to global report on drug abuse, Codeine is considered as the most consumed opium based on tonnage (INCB, 2018). Also, it is widely abused substance because it has short acting, weak and a mild opiate content (Ogundipe, 2016). A study that used social media to analyse the trend in substance use suggested that Codeine abuse would likely become normalised and commercialised (Cherian et al., 2018) since it is readily available to purchase and use. In a qualitative study, Dankani (2012) examine the trend of substance abuse among youths in some states in Northern Nigeria. The result revealed that Codeine cough syrup was among those drugs that were frequently abused. The result further revealed that more females (95.5%) than males (23.4%) abused Codeine cough syrup among the study participants.

The second drug that is frequently abused among youth examined in this study is Toluene which is an aromatic hydrocarbon used in paint thinner and glue (Ogundipe, 2016). Toluene has been abused as a recreational inhalant by many youths. It has high potential to cause severe neurological harm to the users (Camara-Lemarro et al., 2015). Toluene abuse affects the normal functions of the body system. Many youths who are between the age group of 15 and 27 both males and females are presently using Toluene. More males (76.5%) than females (31.3%) youths abuse Toluene among the study participants in Northern Nigerian states (Ajayi, 2020). This goes to show the prevalence of Toluene use and abuse in Nigeria.

Codeine and Toluene are easily accessible opiates Over the Counter (OTC) drugs used for treatment of mild pain and as recreational drugs, respectively, which are prone to misuse and abuse even with the several side effects to the users (Chekezie & Ebuanyi, 2019; Osuh et al., 2021; Tiwari, 2020). The indiscriminate use and abuse of Codeine and Toluene have been directly linked to elements of criminal behaviours across various settings among youths of different age brackets (Olanrewaju et al., 2022), gender (Idowu, 2018). Onyeneke and Karam (2022) have confirmed the medical, psychological, social, economic, and security implications of substance abuse in Nigeria. Because of the increased Codeine and Toluene abuse, and no current empirical studies on the effects of these drugs among youths, there is a need to investigate the influence of Codeine and Toluene abuse on criminal behaviours especially in Minna metropolis.

Therefore, the general objective of this study was to examine the influence of Codeine and Toluene abuse on criminal behaviour among youths in Minna

metropolis. The specific objectives were to determine whether age, gender, religious affiliation, and occupational status influence Codeine and Toluene abuse that would cause criminal behaviour, while the hypothesis is whether Codeine and Toluene abuse would significantly have influenced criminal behaviour among youths in the study population.

Results from this study would help to improve understanding of these socio-demographic factors that influence youths into substance users and non-substance users in Minna metropolis. Also, the study findings would help forensic psychologists to design and implement psycho-education programmes to assist youths who have been affected by substance use in Minna metropolis. Finally, findings from this study would provide solutions on how the government could strengthen drug laws to curb drug use and abuse in the country.

Methodology

Research design:

This study was an ex-post facto study which adopted cross-sectional survey for data collection from a sample of youths in Minna metropolis. The researchers did not manipulate independent variables on dependent variable. The independent variables were self-reported abuse of Codeine and Toluene while the dependent variable was self-reported criminal behaviour among the participants.

Setting

The study was carried out among youths in Minna metropolis, Niger State, Nigeria. Minna is the capital of Niger State, in North-Central, Nigeria.

Sample and sampling technique

Purposive sampling was used to select two Local Government Areas (LGAs): Bosso and Chanchaga in Minna metropolis. Cluster sampling was used to select markets, schools and recreational centres with high concentration of youths from each of the two LGAs. Convenience sampling method was used to select participants for the study.

Instruments

Two instruments were used for data collection.

Drug Consumption:

This was measured using Alcohol Abuse Disorders Identification Test (AUDIT) to determine the rate of consumption of Codeine and Toluene. AUDIT screening test was developed in 1982 in collaboration with the World Health Organization to determine if a person is at the risk of abuse problem. Participants were asked to answer the questions in terms of their experiences in the past six months on the abuse of Codeine and Toluene. The first section measures abuse of Toluene which consists of 11-item. Items include: 'How often do you sniff gum/glue?' and 'How often during the last six months have you had a feeling of guilt or remorse after sniffing gum/glue?' The second section measures Codeine abuse and this consists of 11-item. Sample items include: 'How often do you abuse substance containing Codeine?' and 'Have you or someone else was injured as a result of your Codeine consumption?' the scores ranging from 0 to 28. For both subscales, the scoring are as follow: Low risk (0 to 10), i.e., no problem with Codeine or Toluene; Medium risk (11 to 16), i.e., take too much on occasion; high risk (17 to 20) of taking Codeine or Toluene could lead to causing harm; and addiction likely (21+), i.e., taking Codeine or Toluene is causing

harm. Alvarado et al. (2009) reported the scale Cronbach's alpha of 0.93 (test-retest reliability of 0.97). The scale Cronbach's alpha for the present study was established at 0.86.

Criminal Behaviour:

This was measured using Comprehensive Misconduct Inventory (CMI) 58 (Update F). Participants were asked to tick how many times they have taken part in certain activities during the last six months. Some of the questions include: 'How many times they have purposely damaged or destroyed property that did not belong to them, broken into a building to steal something or mess it up, abused soft drugs, done things just to bother authority figures (e.g. teachers, parents, other adults), joined a gang that was known to commit crimes...?' The CMI 58 (Update F) consists of six subscales:

- Soft Drug Abuse (SDA)
- Hard Drug Abuse (HAD)
- Minor Criminality (MC)
- Serious Criminality (SC)
- Driving Misbehaviour (DM)
- Bullying/Harassing (BH)
- Anti-Authority Misbehaviour (AA)

The subscales reflecting soft/hard drug abuse measured substance abuse factor, while the two modes of criminality were combined to give a general criminality factor. The CMI subscales have been found to be fairly reliable with Cronbach alphas ranging from 0.56 to 0.83 (Nathanson et al., 2006a). The overall index called Total Misbehaviour, has been found to have good reliability ($\alpha = 0.89$; Paulhus & Williams, 2002). Cheiffetz (2017) reported CMI Cronbach's alpha of 0.83. The scale Cronbach's alpha for the current study was established at 0.89.

Inclusion Criteria:

Youths within the ages of 15 and 35 living in Minna metropolis, Niger State met the inclusion criteria.

Procedure

Researchers were identified with the letter of introduction from the Department of Psychology, University of Ibadan, Nigeria. Participants were approached by the researchers to obtain their informed consents to participate in the study. The researchers briefly explained to them the purpose of the study and then asked for their consent to participate in the study. Participants who gave their consents were assured that their responses would be treated confidentially. Participants who can read were given the questionnaires to fill while those who were not able to read were interviewed by the researchers using the questionnaires (Those interviewed were 1% of the total participants). The self-administered questionnaire took less than 15 minutes to complete while the interview method took between 20 and 25 minutes to complete. 250 questionnaires were administered; one questionnaire was incompletely filled and was removed, left with 249 which were used for the analysis.

Data analysis

SPSS version 23.0 was used for data analysis. Descriptive statistics of frequency and percentage were used to summarise the research questions while t-test for independent samples mean was used to test the two hypotheses at a 0.05 level of significance.

Results

The study examined the influence of Codeine and Toluene on criminal behaviour among youths in Minna, Niger State, Nigeria. The results are presented in line with the stated research questions and hypotheses. First, the demographic variables of the study are presented.

Socio-Demographic Variables

Descriptive analysis of the data showed that 154(62%) of the participants were males while 95 (38%) were females. In term of age, 28% were between 15 and 19 years of age; 29% between 20 and 24 years of age; 25% between 25 and 30 years of age and 18% were between 31 and 35 years of age. In terms of their religious affiliations, 33% were Christians while 47% were Muslims, 14% were traditional worshippers while 6% did not indicate their religions. With respect to their marital status, 53% were singles while 47% were married and by extension, 59% of the participants belonged to monogamous family while 41% belonged to polygamous family. Educationally, 5% of the participants attended primary school, 18% secondary, 32% tertiary and 45% attended vocational institutions. In term of occupation, 39% were students, 6% civil servants and 55% were traders.

The results are presented in line with the specific objectives of this study.

Specific objective 1 examined whether gender would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis. The results as presented in Table 1 showed that 33.7% of the participants abused Toluene among whom 65.5% were males while 34.5% were females. Also, 20.5% of the participants abused Codeine, of whom 62.7% were males while

37.3% were females. This infers that Codeine and Toluene abuse were higher among male than female participants.

Specific objective 2 explored whether age would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis. The result as presented in Table 2 showed that 33.7% of the participants abuse Toluene among which 31% were between ages 15 and 19; 28.6% were between 20 and 24 of age; 28.6% were between 25 and 30 of age, and 11.9% were between 31 and 35 of age. Also, 20.5% of the participants abuse Codeine among which 21.6% were between 15 and 19 of age; 23.5% were between 20 and 24 of age, 29.4% were between 25 and 30 of age, and 25.5% were between 31 and 35 of age. This infers that Toluene abuse is highest among participants between the ages of 15 and 19 while Codeine abuse is highest among participants between the ages of 25 and 30. This finding supported previous studies that these age brackets tend to be among the age groups that frequently used and abused substances.

Specific Objective 3 investigated whether religious affiliation would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis. The result as presented in Table 3 indicated 33.7% of the participants abused Toluene among whom 25% were Christians, 56% were Muslims, 13.1% were traditional worshippers and 6% belong to other religions. Also, 20.5% of the participants abused Codeine of whom 31% were Christians, 45.1% were Muslims, 14% were traditional worshippers and 10% belong to other religions. This infers that Toluene and Codeine abuse were higher among the Muslims.

Specific Objective 4 aimed to establish whether occupational status would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis. The result as presented in Table 4 showed that 33.7% of the participants abused Toluene among whom 46.4% were students, 3.6% were civil servants and 50% were traders. Also, 20.5% of the participants abused Codeine among whom 25.5% were students, 9.8% were civil servants and 64.7% were traders. This infers that Toluene and Codeine abused is highest among participants who were traders followed by students whereas civil servants were the least.

Now, the testing of the hypotheses:

Hypothesis 1 stated that Toluene use significantly influences criminal behaviour among youths in Minna metropolis. This was tested using t-test of independent sample means and the result is presented in Tables 5. The results showed significant difference in criminal behaviour between Toluene abusers and Non-Toluene abusers among youths [$t(199) = -4.991, p < .05$] such that those who abused Toluene ($M = 33.2, SD = 15.5$) had higher criminal behaviour than those who do not abused Toluene ($M = 16.7, SD = 24.3$). The hypothesis was supported.

Hypothesis 2 stated that Codeine use significantly influences criminal behaviour among youths in Minna metropolis. The hypothesis was tested using t-test of independent sample means and the result is presented in Table 6. The results indicated that there was no significant difference in criminal behaviour between Codeine abusers and non-Codeine abusers among youths [$t(199) = -.159, p > .05$]. However, observation of the mean difference shows that those who abuse Codeine ($M = 22.6, SD = 20.6$) had higher criminal behaviour than non-Codeine abusers ($M = 21.9, SD = 23.7$). This hypothesis

was partially accepted.

Discussion

The general purpose of this study was to examine the influence of Codeine and Toluene on criminal behaviour among youths in Minna metropolis, Niger State, Nigeria. Four specific objectives and two hypotheses were tested using descriptive statistic and t-test of independent sample mean, respectively.

The first specific objective that examines whether gender would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis shows high prevalence of Toluene (33.7%) and Codeine (20.5%) abused among youths in Minna metropolis which are higher compared to 10.9% of Toluene and 9.12% of Codeine abused reported by Ogundipe (2016) among youths in Minna, Niger State. This means Codeine and Toluene abused in Minna metropolis are progressively higher over the years. Also, the prevalence of Codeine abused in Minna is higher compared to the prevalence reported in the United States (0.57%) and South Africa (0.3%). Youths see Codeine and Toluene as 'thing of pride' to them such that those who do not use Codeine and Toluene are seen as outcasts and non-conforming to the standards of their peers. This finding supported the results obtained by Egbuonu et al. (2017) on the prevalence of Codeine and Toluene in the present study area. This increment requires urgent actions to prevent youths from being addicted to these drugs considering the health, social and occupational effects on them.

The second specific objective that explores whether age would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis reveals that Codeine abuse was highest among youths between the 25 and 30 age bracket

while Toluene abuse was highest among youths between the 15 and 19 age bracket. The variation in age observed infers that taking Codeine in the locality is more in vogue among middle adolescents and young adults than others age brackets. The finding in this study supported the previous studies (Ikoh et al., 2019; Olanrewaju et al., 2022) that youths of age bracket of between 15 and 30 were mostly those that abuse Codeine and Toluene substances. This result is worrisome considering the fact that the most affected age brackets are the most formative years of youths growing into adulthood and possibly marrying and raising family.

The third specific objective that investigates whether religious affiliation would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis indicates that Codeine and Toluene abused were highest among the Muslims compared to Christians and those of other faiths. This is expected as more than 75% of the population in Minna metropolis are predominantly Muslims. However, about 40% of the total population of Muslims in this study reported the abused of Toluene, a proportion that is higher than what is obtained in other religions. Also, about 20% of the Muslim population abused Codeine, a prevalence that is highest when compared to other religions. However, it will not be accurate to assume that Islam is a reason for using these substances since there are no Islamic doctrines or customs that encourage the abused of these substances. Previous studies (Okafor, 2019; Olanrewaju et al., 2022) did not support this study finding that one religion was mainly involved in substance abuse including Codeine and Toluene. The study sees it as coincidence that the dominant participants in Minna metropolis happen to be of one particular religious sect.

The fourth specific objective that aims to establish whether occupational status would influence Codeine and Toluene abuse toward criminal behaviour among youths in Minna metropolis confirms that Codeine and Toluene abused was highest among participants who are traders, followed by students whereas civil servants are the least. This is also in line with the findings that many traders received vocational education. Hence, traders can be said to have more laxity and attitude to engage in the use of these substances. Students were the next in line, since the population of the students is dominated by teenagers, adolescents and young adults. The motives behind the use of these substances by these groups would be difference since they experience different challenges and function in different environments. Probably, the students used these drugs to deal with their academic challenges; traders used them as a mean of dealing with stress in the market place. The finding supported previous studies that occupational status of substance users cut across many strata including traders, students and the unemployed who are unhappy with their situations in life (Okafor, 2019; Olanrewaju et al., 2022).

Also, two hypotheses were generated and tested in this study. The first hypothesis that Toluene abuse would significantly influence criminal behaviour among youths in Minna metropolis was supported. Youths who abuse Toluene reported higher in criminal behaviour than those who do not abuse Toluene. When drugs are used in this way, it tends to lure users to criminal activities. This result supported finding by Ogundipe (2016) who found youths to be among those who use and abuse Toluene as a means of recreational drugs to feel the sense of belonging among their peers.

And the second hypothesis that Codeine abuse would significantly influence criminal behaviour among youths in Minna metropolis was not confirmed. However, further analysis shows that those who abuse Codeine had a mean difference higher ($M = 22.6, SD = 20.6$) than those who do not abuse Codeine ($M = 21.9, SD = 23.7$). Thus, the hypothesis was partially supported. This finding supported previous studies (Osuh et al., 2021) that Codeine has become drug of common use and abuse which could lead to criminal behaviour among youths.

Conclusion

The results of this study have shown that more males than females who are in the age bracket between 15 and 30 years were mostly involved in the abuse of Codeine and Toluene among the study population. Also, the findings show that the prominent population of youths who were Muslims and traders were those engaged in Codeine and Toluene abuse in Minna metropolis. Finally, the findings of this study confirmed that youths who abuse Codeine and Toluene were more involved in criminal behaviours than non-abusers of these substances. The implication of these

findings is for all stakeholders-the parents, the school authority, the NGOs and the government- is to be alive to their respective duties to help reduce the use and abuse of Codeine and Toluene among youth across the state to avert more abuse and criminal behaviours. Therefore, Codeine and Toluene should be taken off the counter and only be accessible on doctor's prescription. The government should create awareness on the deleterious effects of Codeine and Toluene and put intervention programmes in place that focus on students and traders found in this study to be the most abusers of these substances.

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Conflict of Interest

We hereby declare that there is no conflict of interest in the execution of this study.

Tables

Table 1: Prevalence of Codeine and Toluene abused by gender among Youths in Minna metropolis

Variables		Male	Female	Total
Toluene	No	60%	40%	66.3
	Yes	65.5%	34.5%	33.7%
	Total	61.8%	38.2%	100%
Codeine	No	61.6%	38.4%	79.5%
	Yes	62.7%	37.3%	20.5%

	Total	61.8%	38.2%	100%
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Table 2: Prevalence of Codeine and Toluene Abused by Age among Youths in Minna metropolis

Variables		1 15-19	20-24	25-30	31-35	Total
Toluene	No	26.1%	29.7%	22.4%	21.8%	66.3%
	Yes	31.0%	28.6%	28.6%	11.9%	33.7%
	Total	27.7%	29.3%	24.5%	18.5%	100%
Codeine	No	29.3%	30.8%	23.2%	16.7%	79.5%
	Yes	21.6%	23.5%	29.4%	25.5%	20. 5%
	Total	27.7%	29.3%	24.5%	18.5%	100%

Table 3: Prevalence of Codeine and Toluene Abused by Religious Affiliations among Youths in Minna metropolis

Variables		Christian	Muslim	Traditional	Others	Total
Toluene	No	37%	42.4	14.5%	6.1%	66.3%
	Yes	25%	56%	13.1%	6.0%	33.7%
	Total	32.9%	47%	14.1%	6.0%	100%
Codeine	No	33.3%	47.5%	14.1%	5.1%	79.5%
	Yes	31.4%	45.1%	13.7%	9.8%	20.5%
	Total	32.9%	47%	14.1%	6.0%	100%

Table 4: Prevalence of Codeine and Toluene Abused by Occupational Status among Youths in Minna metropolis

Drug		Students	Civil servants	Traders	Total
Toluene	No	35.2%	7.9%	57.0%	66.3%
	Yes	46.4%	3.6%	50%	33.7%
	Total	39%	6.4%	54.6%	100%
Codeine	No	42.4%	5.5%	52.0%	79.5%
	Yes	25.5%	9.8%	64.7%	20.5%

	Total	39%	6.4%	54.6%	100%
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Table 5: T-test Showing Differences in Criminal Behaviour due to Toluene Abused among Youths in Minna metropolis

DV	Toluene	N	M	SD	df	t	p
	No	136	16.7	24.3			
CB					199	-4.991	<.05
	Yes	65	33.2	45.5			

DV= dependent Variable, CB = Criminal Behaviour

Table 6: T-test showing differences in Criminal Behaviour due to Codeine abuse among Youths in Minna metropolis

DV	Codeine	N	M	SD	df	t	p
	No	163	21.9	23.7			
CB					199	-.159	>.05
	Yes	38	22.6	20.6			

CB = Criminal Behaviour

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