Perception and Practice of Nonmedical Use of Opioids among Young People in Ibadan, Nigeria

ABSTRACT

Background: The opioid crisis is a growing public health concern globally. This study investigated the opioid use among young people in Nigeria.

Method: A cross-sectional design was employed using self-administered questionnaires adapted from the WHO student drug-use survey tool. A four-stage sampling technique was used to select the respondents. The data were analyzed with SPSS version 20.

Results: The respondents' mean age was 21.1±2.7 years. There were more male (57.3%) respondents. About 56.5% of the respondents had a poor perception of opioid use. The lifetime prevalence of codeine syrups, dihydrocodeine, Co-codamol, and tramadol use was 14.4%, 13.5%, 13.0%, and 11.4%, respectively, while the past-year was 13.6%, 10.0%, 12.7%, and 10.0%, respectively, and the past-month 12.5%, 13.0%, 12.2%, and 9.4%, respectively. Most of the respondents involved in opioid use were introduced to it by friends/peers (codeine [42.5%]; tramadol [56.1%]). The age of onset of opioid use was 15–19 years (codeine) and > 20 years (tramadol). Perception of opioid abuse was significantly associated with nonmedical use of opioids.

Conclusion: The respondents' perception of opioid use was significant with lifetime, past-year, and past-month nonmedical use of opioids; hence, public enlightenment is needed as a strategy to curb the menace of the opioid crisis among young people.

Keywords: Opioids, nonmedical use, drug abuse, codeine, tramadol

1. INTRODUCTION

Drug abuse is a major public health challenge globally, and according to the World Drug Report (WDR) (2014), in 2012, about 243 million people (corresponding to approximately 5.2% of the world population aged 15–64 years) had used drugs at least once in the previous year – and the most commonly abused drugs were cannabis, opioids, cocaine, or amphetamine. The Nigeria Drug Use Survey published in 2018 by the National Bureau of Statistics (NBS) in collaboration with the United Nations and European Union, estimated the past-year prevalence of any drug use in Nigeria to be 14.4%, equivalent to about 14.3 million people aged between 15 and 64 years who have used any drug in the past year. About 4.6 million of these people were involved in the nonmedical use of prescription opioids, especially tramadol and codeine (NBS, 2018).

The media has reported the upsurge of opioid drug abuse in Nigeria, especially among young people and these two drugs – codeine and tramadol – appear to be the most sought after (Asiedu, 2017; Asiedu, 2018; British Broadcasting Corporation [BBC] Africa, 2018). The recent Nigerian drug use survey report revealed that the nonmedical use of prescription opioids and cough syrup is highest among young people (NBS, 2018). A documentary by BBC Africa titled "Sweet Sweet Codeine" brought to the fore the alarming trend of codeine abuse by young people in Nigeria, which informed the decision of the Federal Government of Nigeria to place a ban on the importation, sales and promotion of preparations containing codeine (BBC Africa, 2018). Despite all the efforts to curb the unauthorized importation and distribution of opioids through illicit channels, the problem persisted. Over half a billion tablets of tramadol were uncovered and seized by the National Drug Law Enforcement Agency (NDLEA) in the year 2018 alone (Odunsi, 2018). Abuse of codeine products carries a great risk of addiction and also contributes to severe health outcomes including liver damage, stomach ulceration, respiratory depression, coma and death (McAvoy et al., 2011; Zamparutti et al., 2010). In Nigeria, even though all

codeine-containing products are locally manufactured and are prescription-only-medicines (POM) since 2012, some products have been smuggled into the country as unregistered products; as such reclassification as prescription-only-medicines (POM) did not stem the trend of abuse partly due to non-adherence to the provisions made for a prescription (Adeyeye, 2018). Tramadol is a synthetic opioid analgesic used to treat moderate to severe pain. Nigeria is one of the countries in the world with the highest use of tramadol relative to our population according to NAFDAC (Adeyeye, 2018). The Nigerian drug control agency has also reported an increase in the smuggling of Tramadol capsules in the country, including very high dosage forms of 200 and 225 mg which are beyond the regulated and medically approved 50 and 100 mg dosage strengths capsule of tramadol (Adeyeye, 2018). Being an opioid, excessive use of Tramadol can lead to addiction or dependence. Tramadol use disorder is associated with physical withdrawal symptoms and compulsive behaviour and its overdose can lead to arrhythmias, cramps, coma and death (National Institute of Drug Abuse, 2018).

Opioid use is a growing challenge in Nigeria; hence, this study aimed to assess the patterns of opioid abuse among young people in Ibadan, Nigeria.

2. MATERIAL AND METHODS

2.1 Study Design

A cross-sectional survey using a semi-structured questionnaire adapted from the WHO student drug-use survey questionnaire (Smart et al., 1980) was employed for the study.

2.2 Study Setting

The study was carried out among the undergraduate students of Polytechnic Ibadan. Polytechnic Ibadan is located in the Sango area, Eleyele, Ibadan, Oyo State, Nigeria. The Polytechnic, Ibadan

(typically called 'Poly Ibadan') is an institution of higher learning founded in 1970 and shares similarities with other polytechnics in Nigeria. The institution was established to provide an alternative higher education to universities, particularly in technical skill acquisition. The Polytechnic has a large and diverse student body with students from different age brackets, religions and cultural backgrounds and offers courses in science and technology, arts, management, and social sciences. There are four halls of residence in the polytechnic, including Ramat and Olori halls (for female students) and Orisun and Unity halls (for female students).

2.3 Study Population

The study was conducted among polytechnic students.

2.4 Sampling Procedure

A multi-stage sampling technique was used to select the participants and all the students who consented to participate were included in the study. Those who gave informed dissent and those who were absent from school or indisposed during data collection were excluded from this study.

2.5 Data Collection Method and Procedure

Tramadol and three different forms of codeine (codeine syrup, dihydrocodeine tab, and Co-codamol tablet) were listed and the respondents were asked to indicate ("yes" or "no") if they had ever used any of the drugs in their lifetime or the past year or month. The survey also included variables related to risk perception and reasons for nonmedical use of opioids among the participants.

2.6 Validity and Reliability of Instrument

The validity of a questionnaire refers to the extent to which the questionnaire measures what it claims to measure. To ensure validity, an extensive review of appropriate literature was carried out. The study instrument was reviewed by the authors who are an expert in research. Other experts in the research were consulted and necessary adjustments were made based on their inputs.

The reliability of an instrument is a measure of the consistency by which the instrument will measure what it is supposed to measure. An instrument is reliable if it gives similar results after several administrations under similar conditions. The pretest of this study was carried out among students of Ede Polytechnic in Osun state, a similar population group to The Polytechnic of Ibadan. A Cronbach Alpha measurement and reliability co-efficient measure were carried out on the pretested questionnaire and a co-efficient of 0.720 was obtained indicating the high reliability of the instrument.

2.7 Data Management and Analysis

Chi-square was used for the comparison of the variables, and statistical significance was set at a p-value < 0.05.

Ethical approval to conduct the research was obtained from the Oyo State ethical review committee with ethical approval reference number AD13/479/907. Verbal and written consent was also obtained from each of the respondents during data collection. For respondents under the age of 16 years, because they cannot legally give consent on their behalf to participate in the research, a brief assent form was signed by their instructors who directly supervised them for authorization and their verbal assent was documented which served as an agreement to participate in the research.

3. RESULTS

3.1 Socio-demographic Characteristics

The age of the respondents ranged from 16 to 30 years (mean=21.1, SD=2.702), and the majority were males (57.3%) (Table 1).

Table 1: Socio-demographic Information of the Respondents

Socio-demographic Information	Frequency	Percent (%)
Age		
16–20	179	49.6
21–25	161	44.6
> 25	21	5.8
Sex		
Male	207	57.3
Female	154	42.7
Religion		
Christian	226	62.6
Muslim	120	33.2
Traditional	15	4.2
Parent's marital status		
Married	293	81.2
Divorced	26	7.2
Widowed	9	2.5
Single parent	33	9.1

3.2 Respondents' perception of nonmedical use of opioids

Many of the respondents (65.7%) did not support the use of codeine/tramadol for nonmedical purposes, and about half believed that the use of tramadol and codeine is dangerous (Table 2).

The perception scale revealed that more than half of the respondents had a poor perception of nonmedical use of opioid drugs (56.5%) (Table 3).

Table 2: Respondents' perception of nonmedical use of opioids

Perception Statements	Agree (%)	Undecided (%)	Disagree (%)
It is okay to use codeine/tramadol for nonmedical purposes	78 (21.6)	46 (12.7)	237 (65.7) *
Use of codeine/tramadol helps the body to relax and feel good	83 (23.0)	97 (26.9)	181 (50.1) *
Codeine boosts confidence and performance	128 (35.5)	85 (23.5)	148 (41.0) *
The benefit of using codeine/tramadol is more than the harm it can cause	128 (35.5)	88 (24.4)	145 (40.2) *
Promotion of codeine/tramadol in music and videos makes drug use attractive	115 (31.9)	94 (26.0)	152 (42.1) *
Tramadol and codeine are not dangerous	89 (24.7)	99 (27.4)	173 (47.9) *
Tramadol can help one to enjoy sexual activities	111 (30.7)	119 (33.0)	131 (36.3) *

Correct responses

Table 3: Overall perception score of the respondents

Perception scale	Frequency	Percent (%)
Poor (0–3)	204	56.5
Good (4–7)	157	43.5
Total	**361**	**100.0**

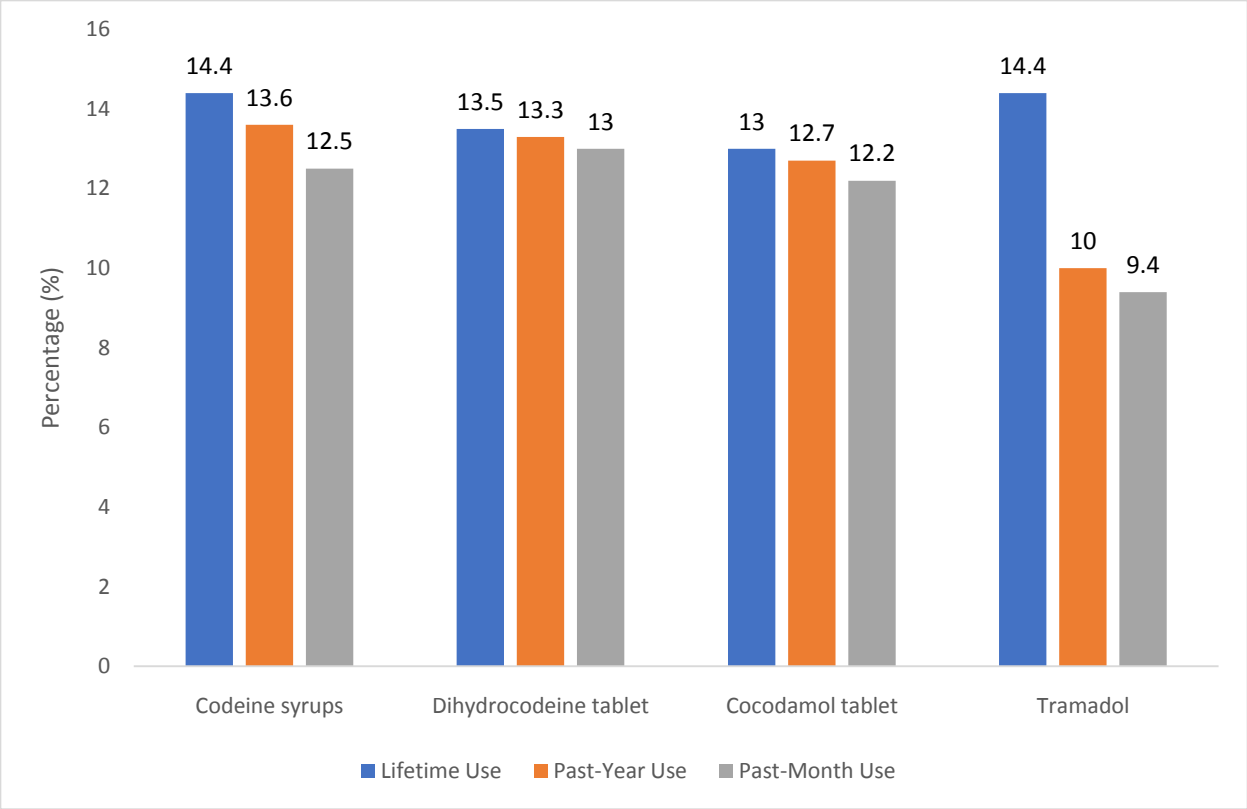

Figure 1: Lifetime, past-year, and past-month nonmedical use of codeine syrups and dihydrocodeine, Co-codamol, and tramadol tablets among the respondents

3.3 How the respondents were introduced to the nonmedical use of codeine and tramadol

The majority of the respondents were introduced to the nonmedical use of tramadol (56.1%) and codeine (42.5%) by their friends/peers (Table 4). Those who have used other drugs with codeine and tramadol were 47.5%. These drugs include alcohol (24.1%), Tutolin cough syrups (17.2%), Rohypnol (10.3%), pain relief tablets (6.9%), Arizona (marijuana) (3.4%), and weed (3.4%).

3.4 Age of onset of opioid use

Most of the respondents in this study first used codeine syrups, dihydrocodeine, and Co-codamol tablets (57.7%, 55.1%, and 53.2%, respectively) when they were 15–19 years, while 58.5% used tramadol when they were > 20 years (Table 5).

Table 4: How the respondents were introduced to the nonmedical use of codeine and tramadol

Ways	Codeine (%)	Tramadol (%)
Friends/peers	62 (42.5)	23 (56.1)
Club members	25 (17.1)	-
Family	22 (15.1	2 (4.9)
Drug pushers	13 (8.9)	2 (4.9)
Internet	12 (8.2)	3 (7.3)
Doctor	5 (3.4)	2 (4.9)
Pharmacist	3 (2.1)	3 (7.3)
Other health workers	2 (1.4)	1 (2.4)
Nobody	2 (1.4)	-
Total	**146 (100.00)**	**41 (100.00)**

Table 5: **Age at which respondents start use of opioid**

Age of respondents	Codeine syrup (%)	Dihydrocodeine (%)	Co-codamol (%)	Tramadol (%)
> 20 years	5 (9.6)	13 (26.5)	13 (27.7)	24 (58.5)
15–19 years	30 (57.7)	27 (55.1)	25 (53.2)	13 (31.7)
11–14 years	14 (27.0)	9 (18.4)	9 (19.1)	4 (9.8)
≤ 10 years	3 (5.7)	-	-	-
Total	**52 (100)**	**49 (100)**	**47 (100)**	**41 (100)**

The Chi-square test (X^2) was used to test the association between the respondents' perception and practice of nonmedical use of opioids at a 95% confidence interval ($p<0.05$). We found a statistically significant association between the respondents' perception of nonmedical use of opioids and lifetime, past-year, and past-month nonmedical use of codeine syrups ($p<0.001$, $p<0.001$, and $p=0.001$, respectively), dihydrocodeine tablet ($p=0.004$, $p=0.002$, and $p=0.008$, respectively), and Co-codamol tablet ($p=0.001$, $p=0.011$, and $p=0.022$, respectively) (Table 6). The lifetime ($p<0.001$), past-year ($p<0.001$), and past-month ($p<0.001$) nonmedical use of tramadol tablets also showed a statistically significant association with the respondents' perception of opioid use (Table 6).

Table 6: Relationship between the respondents' perception and lifetime, past-year, and past-month nonmedical use of opioids

Variable	Perception of opioid drug abuse		Total (%)	X^2	df	p-value
Lifetime use of	**Negative (%)**	**Positive (%)**				
Codeine syrups						
Yes	43 (21.1)	9 (5.7)	52 (14.4)	16.946	1	< 0.001*
No	161 (78.9)	148 (94.3)	309 (85.6)			
Dihydrocodeine tablet						
Yes	37 (18.1)	12 (7.6)	49 (13.6)	8.328	1	0.004*
No	167 (81.9)	145 (92.4)	312 (86.4)			
Co-codamol tablet						
Yes	37 (18.1)	10 (6.4)	47 (13.0)	10.849	1	0.001*
No	167 (81.9)	147 (93.6)	314 (87.0)			
Past-year use of						
Codeine syrups						
Yes	39 (19.1)	10 (6.4)	49 (13.6)	12.291	1	< 0.001*
No	165 (80.9)	147 (93.6)	312 (86.4)			
Dihydrocodeine						
Yes	37 (18.1)	11 (7.0)	48 (13.3)	9.535	1	0.002*
No	167 (81.9)	146 (93.0)	313 (86.7)			
Co-codamol						
Yes	34 (16.7)	12 (7.6)	46 (12.7)	6.497	1	0.011*
No	170 (83.3)	145 (92.4)	315 (87.3)			

Significant

4. DISCUSSION

The lifetime nonmedical use of the different codeine products in this study (codeine syrups, dihydrocodeine, and Co-codamol) was comparable, while that of tramadol tablets was a bit lower

than that of the codeine-containing products. Overall, the lifetime use of opioids in this study is higher than the 9.5% lifetime prevalence among college students reported by Kenne et al. (2017). The past-year and past-month use of the different codeine products and tramadol tablets was also comparable. However, the past-year use of opioids surveyed in this study is lower than the 20.6% past-year prevalence of nonmedical use of opioids reported in a study conducted in Canada (Brands et al., 2010). The similarities in the lifetime, past-year and past-month prevalence of the different codeine formulations and tramadol in this study imply that these opioids are being used in almost equal proportions irrespective of the brands or drug forms. Our findings revealed a significantly higher prevalence of codeine use in contrast to Wang et al. (2014) who found a very low prevalence of codeine syrups use (2.1%) among high school students in China. On the other hand, a study in Egypt reported an 8.8% prevalence of tramadol use among in-school adolescents, which is consistent with our findings (Bassiony et al., 2015).

A national survey of substance abuse in Nigeria estimated the national prevalence rates of lifetime, past-year, and past-month use of opiates as 7.2%, 3.6% and 2.2%, respectively (Adamson et al., 2015), which is generally lower than the findings of this present study. The lifetime prevalence of opioid use in this study is, however, consistent with the findings of Mohebbi et al. (2019), which reported a lifetime prevalence of 12.9%. These findings indicate an active and slightly upward increase in the use of opioids among young people.

The majority of the respondents in this study first used codeine syrups, dihydrocodeine, and Co-codamol tablets when they were 15–19 years old. This is consistent with a study by Bassi et al. (2017), which identified the most vulnerable age group involved in substance use to be young people between 15–19 years of age. Among the respondents involved in the nonmedical use of tramadol in this study, the majority used it when they were > 20 years. WDR (2018) also

revealed that peak levels of drug use in countries and most regions and for most drug types are seen among those aged 18–25 years. Bassiony et al. (2015), however, reported the age of onset of tramadol use among in-school adolescents in Egypt as 16.5±1.1 years. In all, the findings revealed majority started using opioids as teenagers, which is a significant period that presents opportunities to influence the immediate and future health of young people.

About half of the respondents have used other drugs with codeine and tramadol, including alcohol, Tutolin cough syrups, Rohypnol, pain relief tablets, Arizona (marijuana), and weed. An increase in poly-drug use among young people has been reported in several studies (NBS, 2018; Anyanwu et al., 2016). Brands et al. (2010) reported that students who used opioids nonmedically had a higher prevalence of alcohol use and other drugs compared to non-users. Olsson et al. (2017) also found in their study that more opioid-positive patients screened significantly positive for other (noncannabis) drugs compared to nonopioid users.

The majority of the respondents in this study had a poor perception of the nonmedical use of opioids, which is consistent with Mohebb et al.'s (2019) study that reported a negative attitude to opioid use among 95% of their respondents. Chi-square revealed a statistically significant association between the respondent's perception of nonmedical use of opioids and lifetime use of codeine syrups ($p<0.001$), dihydrocodeine tablets ($p=0.004$), and Co-codamol tablets ($p=0.001$). More of the respondents with negative perceptions were involved in the lifetime, past-year, and past-month nonmedical use of all the types of codeine products listed in this study. This is consistent with the findings of Ekpenyong (2012) who found that the perception of students towards drugs affects their behaviour in terms of drug use. Furthermore, past-year and past-month nonmedical use of codeine syrups, dihydrocodeine tablets, and Co-codamol tablets showed a statistically significant association with the respondents' perception of nonmedical use

of opioids. Furthermore, a study carried out among teenagers in the US revealed that young people who hold favourable attitudes towards illicit drugs are at high risk of nonmedical use of prescription opioids (Sung et al., 2005). The lifetime ($p<0.001$), past-year ($p<0.001$), and past-month ($p<0.001$) nonmedical use of tramadol tablets also showed a statistically significant association with the respondent's perception of opioid use. More of the respondents with negative perceptions were involved in lifetime, past-year, and past-month nonmedical use of tramadol, establishing the key role of risk perception in the practice of opioid use.

The major limitation of this study is the fact that the data were self-reported; hence, the prevalence reported could be underestimated, as some of the students may not be willing to indicate their involvement in the nonmedical use of these medications even though their animosity was guaranteed.

5. CONCLUSION

The study revealed that most of the respondents had a poor perception of opioid use and were introduced to it by friends/peers. Further, many of the respondents were introduced to nonmedical use of opioids in their teenage years, indicating a potential period for implementing strategies to prevent opioid use. The respondent's perception of the nonmedical use of opioids was significantly associated with the nonmedical use of codeine and tramadol. Hence, relevant policies and sustained public enlightenment are needed to curb the menace of the opioid crisis among young people.

CONSENT AND ETHICAL APPROVAL

Ethical approval to conduct the research was obtained from the Oyo State ethical review committee with ethical approval reference number **AD13/479/907**. Verbal and written consent

was also obtained from each of the respondents during data collection. All respondents were adequately informed that their participation was voluntary and confidentiality and anonymity were ensured throughout the execution of the research work. After being fully informed about the study, they consented to participate in the study.

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