Alcohol Use in Selected Low-Income Neighbourhoods in Enugu, Southeast Nigeria

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Abstract

Background: Alcohol holds an important role in social engagement in southeast Nigeria. It is considered pleasurable by many who drink it in mild or moderate quantities. Studies show an increasing trend in alcohol consumption, including among adolescents. **Aim:** The aim of the study is to determine the prevalence and pattern of alcohol use among adolescents living in urban settlements in Enugu Urban, Southeast Nigeria. **Materials & Methods:** A cross sectional descriptive study was conducted, using purposive sampling method. Using semi-structured questionnaires, we obtained information on their biodata, medical history, alcohol consumption profiles and a few other lifestyle behaviors. Statistical analysis was carried out using SPSS version 23. **Results:** A total of 473 youngsters aged 10 yeras-19 years were recruited from the two settlements. Females (mean age 15.4 years) were also older than males (mean age 14.8 years) p=0.02. The prevalence of current alcohol use within the preceding 4 weeks was 23.7% (112/473). Males drank alcohol more frequently than females (31.8% *vs.* 17.8%). p<0.01) and local brew (palm wine) was the commonest alcoholic consumed 40 (35.7%). The amount of alcohol consumed (in grams) rose sharply after the age of 15 years with a steeper gradient being observed among the males. **Conclusion:** This study shows that there was a moderate rate of alcohol use among adolescents in the study population which increased sharply after 15 years of age. There is therefore a need for public health enlightenment targeted at adolescents both in school and in the community, to highlight the dangers of excessive alcohol use thereby preventing future alcoholism and consequent heart, vascular, brain and liver diseases that may ensue.

Keywords: Adolescents; Alcohol; Beer; Stout; Enugu; Nigeria

Introduction

The use of alcohol is widespread and integrated into the cultural practices of many ethnic nationalities in Nigeria. Alcohol is commonly used and abused alongside other psychoactive substances in Nigeria and other countries of the world. [1-4] There are indicators within the last two to three decades, alcohol consumption has increased sharply in the country and especially among adolescents. [4,5]

The adolescent age group, covering the ages of 10 years-19 years, is a very important stage in human development, and represents the transitional period between childhood and adulthood. [6,7] It is a period during which multi-faceted developmental changes take place in the physical, cognitive, emotional and behavioral domains. [8] Most children leave home within this age group and are no longer under the full supervision of their parents or guardians. At this point, many will be exposed to social influences and peer pressure leading to the exposure to several psychoactive substances including alcohol. [1] Incidentally, the initiation of alcohol use behavior often occurs at this stage of development as well as laying the foundations for later drinking and future psychoactive drug use habits. [8]

Previous studies suggest that the risk factors that predispose adolescents to use and abuse alcohol are male gender, alcohol use in the family, peer pressure, ready availability of alcohol in neighborhoods, lack of parental supervision, and inadequate social and coping skills. [9,10] To this must be added the influence of poor school engagement, interaction with alcohol and drug using peers, influence of alcoholic beverage advertisements, and community perception of alcohol use among young people. [11-13]

Studies on the drinking behavior of adolescents indicate an increasing trend in Nigeria. [14,15] Published reports on the extent of alcohol use among adolescents and young adults in Africa have quoted a widely varying range of Figures. For instance, the WHO estimated that 41% of adolescents aged 15 years-19 years in Africa admitted to having used alcohol in 2012 whereas 29% stated that they had used it in the past 12 months. [16] This has been also reported in several other studies. [14-20] Studies from Nigeria have reported different prevalence rates for alcohol use among adolescents which are varied between regions possibly because of socio-cultural differences (especially religious beliefs) and the particular age group studied. In Benin City, Akanni et al. [21] reported a prevalence rate of 55.9% of ever using alcohol while Osonuga et al. [15] in south west Nigeria reported a lifetime prevalence of alcohol use among adolescents as 66%. Another study from southern Nigeria among 1080 secondary school students in Port Harcourt reported a prevalence of current drinking and lifetime drinking of 30.6% and 38.1% respectively. [22]

The public health impact of alcohol use among adolescents is enormous. The use of alcohol by adolescents has been linked with social consequences like violent and delinquent behavior, drinking and driving and related traffic accidents, academic underachievement, risky sexual behavior, and deliberate self-harm. [23,24]

A study had found that early initiation of alcohol use is associated with subsequent alcohol abuse, as well as its physical and mental health concomitants and a likelihood of experimenting with other drugs. [9] Also, individuals who begin drinking before age 15 years are four times more likely to develop alcohol dependence in their lifetime than individuals who begin drinking at 21 years. [25] Thus, alcohol use in adolescence can lead to significant harm to physical, mental, and social wellbeing. It is therefore an important public health goal to delay the initiation of alcohol use by adolescents in order to safeguard their health.

There is a dearth of epidemiological data on the use of alcohol among adolescents in urban areas in southeast Nigeria. This kind of data will be relevant for public health policy and intervention planning. This study is aimed at determining the extent and patterns of alcohol use among adolescents in two high density poor urban neighborhoods in Enugu, southeast Nigeria.

Materials and Methods

Study setting

We conducted a cross-sectional descriptive study using a purposive sampling method in two selected urban low-income settlements (Agu-Abor and Ugbodogwu) in Enugu, the capital city of Enugu State, southeast Nigeria. The two settlements were selected purposively because of their relatively isolated location and high-density clustering of residential units. The inhabitants of Agu-abor were surveyed over a 4-week period (August 12–September 9, 2013), while Ugbodogwu inhabitants were surveyed between November 25-December 21, 2013. This study was approved by the ethics committee of the University of Nigeria Teaching Hospital Ituku/Ozalla, PMB 01129 Enugu. No NHREC/05/01/2008B-FWA00002458-1RB00002323.

Sampling Method

Data collection

A semi structured questionnaire was used to collect data on selected socio-demographic characteristics, lifestyle behaviors and medical history. Data on alcohol use was collected using a semi-structured questionnaire (See Appendix), specifically designed by the investigators after a review of the relevant literature. [1-5] All consecutive consenting adolescents 10 years to 19 years were included in the study, whereas the exclusion criteria were refusal to participate or unavailability of an adult to give consent for those younger than 18 years at the time of a visit to their households.

The questionnaire sought to elicit data on alcohol use within the last 30 days. Estimated amount of alcohol used in a week and the type of alcoholic beverage preferred were documented. The quantity of alcohol was estimated using different bottle sizes for beer (600 ml), stout (600 ml and 300 ml), palm wine (200 ml cups) and gin (25 ml and 50 ml cups). Current use of alcohol

was defined as use of any or all alcohol beverages in the past 4 weeks.

The safe limit of alcohol was defined based on WHO guidelines of 21 units for men and 14 units for women per week. [25] The level of education is the individual's highest educational (formal) attainment based on the Nigerian school system. Current tobacco use was defined as the use of any form of tobacco products in the past 4 weeks.

The minimum sample size was calculated using the Taro Yamane formula 26, N=N/1+N(e)2. Where: n=required sample size, e2=error limit and N=estimated adult population in both settlements.

N=estimated population of the community (9000), e=0.05.

N=9000/9000*0.0025 =9000/22.5=400. So, a minimum of 400 individuals were recruited.

Statistical Methods

For database management and statistical analyses, we used the SPSS version 23 (IBM Corporation, New York, USA). Data were presented in tables and figures. For continuous variables, mean values and standard deviation were calculated. Rates were expressed as percentages. Categorical values were compared using the Chi Squared test. Mean age was compared using the independent t-test. In all, p value<0.05 was regarded as statistically significant. Conclusions were drawn at 95% confidence interval.

Results

We interviewed a total of 473 young people aged 10 years-19 years within the two localities. Females (mean age 15.4 years) were older than males (mean age 14.8 years) p=0.02. The male to female ratio of those screened was 1:1.3. The peak age group of males and females was 18 years-19 years and 16 years-19 years respectively (26.8% and 52.8% respectively) [Table 1 and Figure 1]. Most participants were students and apprentices (97.9%) and attained senior secondary school education (48.4%) at the time of the study. The data is presented in Table 1. Only one male used tobacco (smoked cigarette) in the preceding 4 weeks before the study.

Alcohol consumption

The proportion of those that drank alcohol within the preceding 4 weeks was 23.7% (112/473). Males drank alcohol more frequently than females (31.8% *vs.* 17.8%) (p<0.01). Of the alcoholic beverages used local brew (palm wine) was the commonest alcoholic beverage consumed 40(35.7%) and was also drunk equally by males and females(P=0.96). Beer and stout were consumed more frequently by males p <0.02 [Table 2].

The amount of alcohol consumed by the participants estimated in grams is shown in Table 3. Based on the percentage of alcohol contained in most common brands that are sold in Nigeria, the estimated consumption of alcohol (in units and grams)was higher in males than females (p<0.01). The amount of alcohol consumed (in grams) rose sharply after the age of 15 years with a steeper gradient being observed among the males [Figure 2]. The peak age of alcohol consumption among the participants was 18 years-19 years. Figure 2 depicts this.

| Table 1: Characteristics of participants.				
Characteristic	Male	Female	Total	P-value
N (%)	198(41.9)	275(58.1)	473(100)	<0.01
Age, years, (sd)	14.8(3)	15.4(2.7)	15.1(2.8)	0.02
Occupational status				
Students/apprentices	195(98.5)	268(97.5)	463(97.9)	
Business/Artisan	3(1.5)	7(2.5)	10(2.2)	0.53*
Level of Education				
Primary, n (%)	63(31.8)	40(14.5)	103(21.8)	
Junior Secondary n (%)	45(22.7)	96(34.9)	141(29.8)	
Senior Secondary n (%)	90(45.5)	139(50.5)	229(48.4)	<0.01
Lifestyle				
Current tobacco use (Cigarettes), n (%)	1(0.5)		1(0.2)	0.24*
P-values are for the sex differences. *: Fisher' exact Test.				
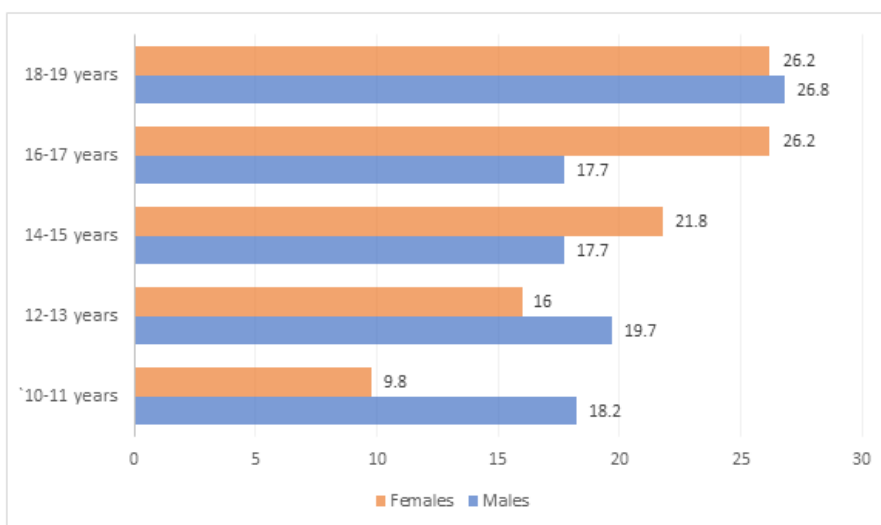
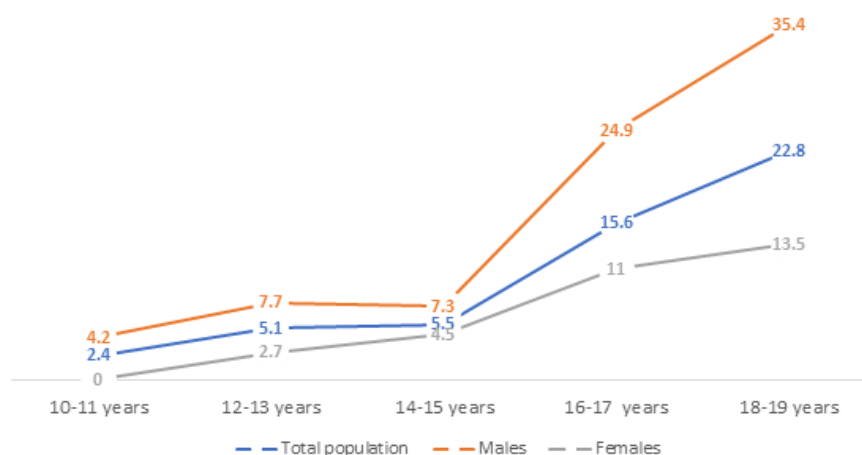**Figure 1:** Age and gender distribution of the participants. (N=473), p-value=0.02.

Figure 2: Mean consumption of alcohol among the children by age and gender in percentages.

Discussion

The use of alcohol is integrated in the cultural practices of many ethnic groups in Nigeria and hence it is widespread in the country. Alcohol is the most commonly used psychoactive substance in Nigeria irrespective of gender and age group. [1-3] Factors such as availability and affordability which are key determinants of accessibility are some important driving forces that are contributing to the rising trend of alcohol use among adolescents in Nigeria. [26-28]

This study included 473 adolescents aged 10 years-19 years

Table 2: Alcohol consumption among the children.

Characteristic	Males n (%)*	Females* N (%, 95%, CI)	Total	p-value
N	63(31.8)	49(17.8)	112(23.7)	<0.01
Beer	24(38.1)	11(22.9)	35(31.3)	<0.02
Stout	21(33.3)	14(29.2)	35(31.3)	0.02
Gin	1(1.6)	-	1(0.9)	0.24
Local Brew	17(27)	23(47.9)	40(35.7)	0.96

P-values for sex differences. *: Percentage of those drinking alcohol.

Table 3: Mean Consumption of different types of alcoholic in the sample population in grams.

Characteristic	Males, mean (sd)	Females, mean (sd)	Total, mean (sd, range)	p-value*
Quantity of alcohol/week(g)				
Beer	9.1(33.5)	1.4(8.3)	4.6(22.9)	<0.01
Stout	5.2(17.1)	2.8(18.6)	3.8(18)	0.17
Gin	0.2(2.1)	0	0.1(1.4)	0.24
Local brews	3(10.5)	3.6(13.2)	3.4(12.1)	0.62
Total	17.4(36.7)	7.9(23.5)	11.8(11.9)	<0.01
Unit of alcohol	2.2(4.6)	1.0(2.9)	1.5(3.6)	<0.01

with a mean age of 14.8 years and the male to female ratio of the participants was 1:1.3. Most of the participants were students and tradecraft apprentices (97.9%) who were mostly in the age group,18 years-19 years. The observed current prevalence of alcohol use was 23.7% (112/473) and more in males than females reported having taken alcohol within the preceding four weeks (31.8% versus 17.8%) and this difference was found to be statistically significant (p<0.01). The most commonly used alcoholic beverage in this study group was palm wine(the locally brewed drink of the area). Forty of the participants 40(35.7%) reported having taken palm wine within the preceding four weeks. Relatively more females than males reported having taken palm wine within the period (47.9% *vs.* 27.0%) but this observed difference did not attain statistical significance (p=0.96). On the other hand, Beer and stout were consumed more frequently by males relative to the females and these differences attained statistical significance (p<0.01 and 0.02 respectively). The male participants consumed a larger quantity of alcohol than the females (p<0.01) and this differential resulted mostly from the contributions of beer.

The demographic variables in this study are comparable to that of many others conducted within and outside the Nigerian context. [8-10,15,16] Since alcohol is a part of our age long cultural practices in South Eastern Nigeria, there are traditional forms of gin and beer that are available in most communities. The prevalence of current alcohol use in the index study is within the limits previously reported among adolescents and young adults in the African setting. [8,15,17,21,22,29] In Ethiopia,the current prevalence of 40.9% was reported and this is higher than what we have obtained. Higher rates have also been reported in South Africa [19] and Ghana. [8,20] The differences between our findings and these other studies may relate to differences in the modes of data collection, nature of the cultural setting, or the extent of alcohol use within these various settings on a population level. In a study conducted in Port Harcourt, South-south Nigeria, the prevalence of current drinking among secondary school students was 30.6%. [22] This is closer to the rate obtained in this study, and may not be unconnected to the proximity and similarities in cultural practices and child-rearing patterns between the two places.

In this study, we observed that the rate of alcohol use increased sharply after the age of 15 years. This appears to lend support to the contention that the use of alcohol in adolescence increases throughout the period of adolescence in relation to the strength of peer influence and reduced supervision and monitoring from parents. [29] Parents often tend to be more liberal in their supervision of their children in later adolescence during which many of them are in senior secondary schools or attending institutions of higher learning. The available research data suggests that the enforcement of strict rules by parents in relation to teenage alcohol and psychoactive drug use goes a long way towards deterring these young people from experimentation with them. [29]

The gender distribution of alcohol use in all age groups has always been skewed towards males. [8,15,17,21,28,30,31] The findings of this study support this contention. Nevertheless, high levels of female consumption have also been documented among undergraduates [32,33] and this appears to be the case among the older adolescents in this study. Male consumption of alcohol has been linked to several factors including masculinity, cultural stereotyping and socialization patterns, and its perceived role in promoting high sexual performance. [31] It is not certain which of these factors may have contributed the most in influencing the male preponderance in the use of alcohol within the setting we have studied. Perhaps future studies conducted using qualitative approaches may be able to unravel this aspect.

Beer and stout were the most frequently consumed beverages among the participants whereas gin was the least. A similar pattern had been reported among adults in Enugu [32] and this finding is quite similar to those of other studies [2,28] although different from some others. [34,35] The beer and stout market in south eastern Nigeria consist of many brands that are both indigenously brewed as well as imported products and many of these are easily affordable. Palm wine, the locally brewed traditional drink of the area, was also commonly used by the participants. Palm wine is commonly served for household entertainment and for lubrication of all forms of social intercourse among the Igbos in southeast Nigeria. It is also utilized for all forms of celebrations and ceremonies including

marriage, burials, and traditional ceremonies and is locally considered to be very rich in yeast and therefore good for the eyes. Furthermore, it is cheaper and more affordable than the industrially brewed beverages. Palm wine contains varying amounts of alcohol, ranging from 3%-6%, depending on the number of hours or days it has been allowed to ferment before consumption. [2,5] It is noteworthy that Palm wine was the drink consumed frequently by the female participants in the study. This would probably suggest that their use of alcohol was limited to those available within the household or during celebrations or ceremonies in the family. Further studies can be focused on delineating the brands of alcoholic beverages preferred by young people of both gender and the contexts within which they make different choices.

The rate of alcohol use observed in this study in an environment of extreme poverty, high density occupancy of neighborhoods with minimal city infrastructure gives cause for concern. The negative consequences of alcohol use for in-school adolescents on academic performance and individual development are worthy of mention. Adolescents who use alcohol are at greater risk of unintentional injuries, truancy and dropping out of school, academic and scholastic underachievement, development of conduct disorders and for some people getting involved in violent and cult activities, high risk sexual behavior, and predisposition to developing psychiatric and behavioral disorders in later life. [15,22] Peer and social networks remain the channels for the spread of drug use, conduct and antisocial behavior [36] and socially accepted drugs like alcohol and nicotine remain the major vehicles for engagement among adolescents and youths in the cities. [37-39] It is clearly an important public health goal to seek to reduce the use of alcohol and other psychoactive drugs among adolescents in the poor urban neighborhoods as a means of stemming the spread of vice, delinquency, and gang violence in the community.

This study has some limitations. First, alcohol use was self-reported and may not be accurate. This is more so among adolescents who may want to hide their drinking behavior from their parents and siblings. However, data was collected privately after proper explanation of the nature of the study and the fact that personal identifying information would not be utilized in the analysis of the data. Secondly, we estimated the alcohol content of the beverages based on the brewers' information provided on the labels of the most common brands; however, we recognize that the alcohol content may vary from one brand to the other, especially for the indigenously produced brands. Thirdly, palm wine and local gin local do not have fixed alcoholic content hence we used standard percentages documented in the literature. Finally, the cross-sectional nature of the study limits the possibility of drawing causal inferences from the associations observed in this study. Despite these limitations, however, this study has provided some baseline data on the use of alcohol among adolescents in high density urban settlements in Enugu and could serve as a guide for the conduct of further studies within the adolescent age group.

Conclusion

Alcohol use is becoming coming among adolescents in Enugu and their involvement with this substance increases with age.

This is a situation that needs to be addressed because the use of alcohol tends to precede the use and abuse of other psychoactive substances that may adversely affect the life trajectory of these young people in different ways. There is a need for the development of public health interventions that could effectively provide appropriate educational information on alcohol and drug use and their adverse effects among in-school and out-of-school adolescents in the urban and rural areas of the state. It is also important to consider the design and conduct of more focused studies to understand the factors that underpin the increasing quest to experiment with alcohol and other psychoactive substances among adolescents.

Reference

1. Okpataku CI, Kwanashie HO, Ejiofor JI, Olisah VO. Prevalence and socio-demographic risk factors associated with psychoactive substance use in psychiatric out-patients of a tertiary hospital in Nigeria. Nig Med J. 2024; 55:460-464.

2. Dumbili E. Changing patterns of alcohol consumption in Nigeria: An exploration of responsible factors and consequences. Medical Sociology. 2013;20:20-33.

3. Adamson TA, Ogunlesi AO, Morakinyo O, Akinwande AO, Onifade PO, Erinosho O, et al. Descriptive National survey of substance use in Nigeria. JART. 2015;6:3.

4. Dumbili EW. A Review of substance use among secondary school students in Nigeria: Implications for policies article in drugs education prevention & policy. Drugs Educ Prev Pol. 2015;22:387-399.

5. Global status report on Alcohol 2004. African Region: Country profiles Nigeria. World Health Organization. 2004

6. Sawyer S, Patton G. Why adolescent health matters. Health. 2011;110–127.

7. Young people's health in context: Selected key findings form the health behavior in school aged children study. Fact Sheet Euro. 2004;4:4.

8. Hormenu T, Hagan Jnr JE, Schack T. Predictors of alcohol consumption among in-school adolescents in the Central Region of Ghana: A baseline information for developing cognitive-behavioural interventions. PLoS One. 2018;13.

9. Grube JW. Environmental approaches to preventing drinking and drinking problems among youth. J Sub US. 2009; 14:19-38.

10. Scheier L. Handbook of drug use etiology: Theory, methods, and empirical findings: Washington, DC. APA. 2009; 493–509.

11. Kuntsche E, Kinble R, Gmel G, Engels R. Why do young people drink? A review of drinking motives. Clin Psychol Rev. 2005;21:841-881.

12. McCabe SE, Veliz P, Carol J, Boyd CJ. Early exposure to stimulant medications and substance-related problems: The role of medical and nonmedical contexts. Drug Alcohol Depend. 2016;163:55–63.

13. Bryden A, Roberts B, Mckee M, Pettivew M. A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. Health Place. 2012;18:349-357.

14. Anderson P, De Bruijn A, Angus K, Gordon R, Hastings

G. Impart of alcohol advertising and media exposure on adolescent alcohol use: A systematical review of longitudinal studies. Alcohol Alcohol. 2009:44:229-243.

15. Mckee SA, Hinson RE, Wall AM, Spriel P. Alcohol outcome expectances and addiction behaviour. Alcohol Alcohol.1998;23:17-22.

16. Osonuga AA, Ogunmoroti BD, Osonuga A, Da'costa A. Alcohol use among secondary school students in Nigeria: A worrisome trend. Niger J Clin Res. 2019;8:54-59.

17. Global status report on alcohol and health 2014. World Health Organization. 2014.

18. Anteneh MB, Telake AB, Meseret SW. High prevalence of substance use and associated factors among high school adolescents in Woreta Town, Northwest Ethiopia: Multi-domain factor Analysis. BMC Public Health. 2014; 14:1186.

19. Negussie B. Substance use among high school students in Dire Dawa, Ethiopia. Harare Bull Health Sci. 2012;4:38–42.

20. Hamdulay AK, Mash R. The prevalence of substance use and its associations amongst students attending high school in Mitchells Plain, Cape Town. S Afr Fam Pract. 2011; 53:83–90.

21. Adu-Mireku S. The prevalence of alcohol, cigarette, and marijuana use among Ghanaian senior secondary students in an urban setting. J Ethn Subst Abuse. 2003; 1:2:53–65.

22. Akanni OO, Adayonfo EO. Correlates of psychoactive substance use among Nigerian adolescents. Sahel Med J. 2015;18:192-199.

23. Alex-Hart BA. Opara PI. Okagua J. Prevalence of alcohol consumption among secondary school students in Port Harcourt, Southern Nigeria. Niger J Paed. 2015;42:39-45.

24. Komro KA, Tobler AL, Maldonado MMM, Perry CL. Effects of alcohol use initiation patterns on high risk behaviours among urban, low-income, young adolescents. Prev Sci. 2010;11:14-23.

25. Grant BF, Dawson DA. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. J Subst Abuse. 1997;9:103-110.

26. World Health Organization. Global Status Report on Alcohol and Health 2018.

27. Yamane T. Statistics, an introductory analysis (2nd ed). Harper and Row New York. 1967.

28. Collier JD, Webster G. In colledgedavidson's principle and practice of medicine. Churchill Livingstone Elservier. 2010;954-958.

29. Lasebikan VO, Ola AB. Prevalence and correlates of alcohol use among a sample of Nigerian semirural community dwellers in Nigeria. J Addict. 2016;2831594.

30. Koning IM, Eijnden RJ, Engels RC, Verdurmen JE, Vollebergh WA. Why target early adolescents and parents in alcohol prevention? The mediating effects of self-control, rules and attitudes about alcohol use. Addiction. 2010;106:538-546

31. Dada O, Odukoya O, Okuyemi k. Risk perception and correlates of alcohol use among out-of-school youth in motor parks in Lagos State, Nigeria. Malawi Med J. 2016;28:19-25.

32. Chikere, EIC, Mayowa MO. Prevalence and perceived health effect of alcohol use among male undergraduate students in Owerri, South-East Nigeria: A descriptive cross-sectional study. BMC Public Health. 2011;11:118.

33. Onodugo OD, EzealaA, Anyim OB, Ezeme M, Ijoma UN, Obumneme AI, et al. Prevalence and pattern of alcohol use among adults in an urban slum in South East Nigeria. Open J Psych. 2019;9:179-191.

34. Grittner U, Kuntsche S, Graham K, Bloomfield K. Social inequalities and gender differences in the experience of alcohol-related problems. Alcohol Alcohol. 2012;47:597–605.

35. Adelekan ML, Ndom RJE, Makanjuola AB, Parakoyi DB, Osagbemi GK, Fagbemi O, et al. Trend analysis of substance use among undergraduates of University of Ilorin, Nigeria, 1988-1998. Afr J Drug Alcohol Stud. 2000;1: 39-52.

36. Gureje OVO, Lasebikan VO. Alcohol beverage type, problem drinking and self-reported health status. Niger J Pshy. 2006;4:4–8.

37. Brisibe S, Ordinioha B. Socio-demographic characteristics of alcohol abusers in a rural Ijaw community in Bayelsa State, South-South Nigeria. Annals Afri Med. 2011;10:97-102.

38. Rose JE, Braver LH, Behm FM, Cramblett M, Calkins K, Lawhon D. Psychopharmacological interactions between nicotine and ethanol. Nicotine Tob Res. 2004;6:133-144.

39. Rose JE, Braver LH, Behm FM, Cramblett M, Calkins K, Lawhon D. Psychopharmacological interactions between nicotine and ethanol. Nicotine Tob Res 2004;6:133-144.