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High school alcohol use assessment: A descriptive report of underage drinking in Ghana

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Abstract: **Early alcohol onset has been identified as a risk factor to binge drinking and alcohol dependency to most young people. In Ghana, most of the risk factors that exposes young people to early alcohol use are ignored. This study assessed a descriptive epidemiology of adolescent alcohol use among high school students in Ghana.**

Methods: This cross sectional study assessed alcohol use in four senior high schools in Ghana using structured questionnaire adapted from the Youth Risk Behavioural survey among 375 students (Average age=18years, SD=1.9 years, minimum age=15 years, range=10, Female= 64.8%, min). We reported descriptive statistics on the prevalence, drinking pattern, sources of alcohol exposure and other alcohol related measures among 149 underage students (below 18 years).

Results: The prevalence of alcohol use of 45% (CI: 36%-53%) was observed among underage high school students with females (68%) reporting higher alcohol use than males. Observed drinking patterns were mostly low drinkers (89%), binge drinkers (15%) and heavy drinkers (7%). Peers and media advertisements were reported to expose respondents to early drinking. Occasional drunkenness (27%) and risky sexual behaviours (19%) were the major negative consequences due to alcohol use that was reported by students.

Conclusion: Epidemiological findings to adolescents high school alcohol use identified in this study indicated a call for action to prevent early onset of adolescent alcohol use and to control future alcohol related negative consequences of alcohol. We recommend effective and evidence based policy formulation, implementation and interventions to address alcohol related concerns in this study.

Keywords: **Alcohol use, Underage drinking, High School, Youth Risk Behavioural Survey, Early Alcohol Onset.**

1. INTRODUCTION

Throughout ages, many cultures have solicited to the use of alcohol for several reasons and occasions. However, excessive use of alcohol and risky drinking habits can be detrimental to the health and wellbeing of individuals, families and society especially among young people. Improper alcohol use has contributed to high burden of injuries, morbidity and mortality, hence making this an issue of immense public health concern [1]. Despite the widespread interventions to raise awareness of the harmful effect of alcohol use, global data suggest an increase in alcohol use among young people [2]. Reports suggests that alcohol and other drugs are increasable becoming a major problem in Ghana [3]–[5] with adolescents alcohol per consumption capita (APC) of 15+ years of about 21%. In Ghana and other developing countries, evidence based risk factors to alcohol use seems to be on the increase with little been done to address the issue of

underage drinking [6], [7]. Excessive exposure to media with high level of alcohol promoting content, for instance, influences adolescent consumption of alcohol. A study have cited movies and television that depict alcohol use, music that includes lyrics about alcohol use, and advertisements for different brands of alcohol to be different forms of media that expose young people to use alcohol [8]. Television and radio stations in Ghana have flooded their networks with these advertisement that exposes young children [9] to alcohol. In January 2018, the Food and Drugs authority in Ghana issued a ban on both advertisement and Live Presenter Mention of alcoholic beverages in the media before 8pm in order to protect children and the underage from excessive alcohol exposure. However, this caution seemed to be ignored by almost all media outlet in the country. This possess threat to the health and wellbeing of Ghanaian youth and their future as adolescents who begin to drink at an early age are at higher risk for injury, illness, long-term alcohol abuse, or even death related to alcohol use [8].

The sustainable development goal 3 of the United Nations Organization aims to ensure healthy lives and promote well-being for all at all ages. In so doing it seeks to, as part of its objectives to "strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol"[10]. In this study, we assessed alcohol use among underage high school students in the lower Manya Krobo municipality of Ghana. With limited alcohol related research work done in this population, this work presents a descriptive overview of underage drinking among high school students in the district. It also provide a basic epidemiology of alcohol consumption for further inferential studies in the areas of underage drinking in the district.

2. METHODS

Participants

The study took place at Senior high schools in the Lower Manya Krobo Municipality of the Eastern Region of Ghana. Four (4) Senior high schools were randomly sampled from the eleven senior high schools in the municipality. They included Manya Krobo SHS, Akro SHS, King David SHS and Community Development Vocational Training Institute (CDVTI). The selected schools practices a boarding and day school system, hence students from different parts of the country are enrolled in these schools. Thus, participants in this study were geographically spread from different parts/regions of Ghana. At each randomly selected schools, all participants in selected courses/program were recruited for the study. 375 student in total participated in the study.

Study Design and Procedures

Approval for this school base study were obtained from The Ensign College of public health Internal Review Board. Following these approvals, the Ghana Education Service of the Lower Manya Krobo Municipality gave further permit to meet Heads of schools for the survey. In Ghana and in the Lower Manya Krobo municipality, most of the senior high schools are boarding schools. Hence, Heads of schools and other school authorities acts as custodian and caretakers of students. Therefore, School Heads were given written information about the study and informed that the information disclosed to researchers about the use of alcohol would be kept confidential and not passed to the parent, guardian and school staff without prior consent of the participant. Following school heads approval, questionnaires were administered to the students.

Also, student above the age consented to the study by reading and approving an informed consent form before participating in the study. Researchers ensured high level of anonymity. The data collection tool was devoid of any means of students/ participants identification such as names, index numbers, etc. in order to ensure anonymity.

A cross sectional study design was employed. The study was a school based study with the use of a well-structured questionnaire adapted and modified from the 2017 State and Local Youth Risk Behaviour Survey (YRBS) [11] and novel questions by the researcher. The State and Local Youth Risk Behaviour Survey (YRBS) is a standard survey tool used for studies that measure youth risk behaviours including substance abuse especially in the United States of America. Since its use in the 1990s, the YRBS has been proved to be reliable with 71.7% of the items rated as having "substantial" or higher reliability (kappa = 61-100%)[12]. It has been adapted for use other countries such as Brazil, Mexico, India and South Africa with adequate validity [13]–[19]. Most of the questions were close ended and took not more than about 20 minutes to complete. It consisted of two sections including the demographic, tobacco/cigarette smoking and alcohol consumption.

The demographic section collected data on the demographic characteristics of the respondents. Tobacco/cigarette smoking and alcohol consumption sections also collected data on rates, reasons for use and abstinence, consequences of alcohol use, recommendations to reduce underage drinking, who is responsible, etc.

The questionnaire was designed in English language as all high school students in Ghana speak, read and write English language well. Since high school students with good level of literacy will be responding to questionnaires and the simplicity of the questions, the mode of questionnaire administration was self-administration.

Measures

Various demographic information was obtained. These were mostly closed ended questions. However, respondents were given options to write out their responses if their responses are not stated. These open ended responses were later categorised to form categorical responses. The sociodemographic characteristics included variables such as age, gender, year in school, school residential status, parental status, etc.

Respondents who has ever used was determined by answering "yes" to the question "Have you ever had alcoholic beverages like beer, wine, gin, bitters or liquor?"

Various alcohol use patterns were assessed among the participants using standard definitions [20], [21] described below. Moderate drinkers constitute respondents who drink on average one alcoholic drink with 3 to 19 days within a month. Low risk drinkers constitute respondent who drink on average one alcoholic drink with 2 days or less in a month. Binge drinkers constitute respondent who drink who in the past one month has drank 5 or more drinks in a row. Heavy drinkers constitute respondents who in the past one month has drank 4 or more alcoholic drinks in a row for 3 days or more.

Analysis

Completed questionnaires were entered into Microsoft excel 2013. Data was double entered to ensure clean data accuracy. Any differences observed after double entry of data were corrected by comparing with the original data set. The corrected data was further cleaned to obtain a master data set. The master data set was imported into STATA 14 for descriptive analysis. Data output was presented in graphical form (bar charts) with the use of Microsoft excel 2013.

Descriptive analysis was conducted on prevalence measures, socio demographic distribution, among other variables in the form of percentages, mean, standard deviations, etc.

Further descriptive analysis was conducted on the main sources of exposure, people responsible, consequences and recommendations of alcohol use.

3. RESULTS

General Characteristics of Respondents

With a 100% response rate, all student willingly participated in the study. With a minimum age of 15 and a range of 10, the average age of the respondents was 18 years with a standard deviation of 1.9 years. Table 1 shows the frequency and percentages of the respondents. 42.2% of the respondents were below the age of 18. Females (64.8%) constituted the highest proportion of the respondents

Participants were predominantly Christians (96%), and mostly from the Krobo ethnic group. Most of the respondents lived in urban areas. 86% of the respondents reported that their parents were employed.

In terms of parental status, half of the respondents lived with both parents. Similar rates (about 6%) was recorded for students living alone and with adopted parents. The second highest proportion of students lived with single parents (26.7%) followed by those living with other relatives (10%).

Parental educational level was higher among fathers than mothers. More fathers (26.6) had tertiary education than mothers (7.6). A principal component analysis using parental educational levels, parental employment status and residential status was used to assess the SES of respondents. 43.5% of respondent were fell into medium social class whereas 22.7% and 24.5% were categorised into high and low socio class respectively.

Table 1. Sociodemographic characteristics of Respondents (N=375)

Table. 1: Characteristics of Respondents (N=375)

VARIABLE	FREQUENCY (n)	PERCENT (%)
Gender		
Female	239	64.8
Age Group		
Below 17 years	149	42.21
18-20 years	169	47.88
21+ years	35	9.92
School		
CDVTI	85	22.7
Manya Krobo SHS	133	35.5
Akro SHS	77	20.5
King David SHS	80	21.3
Grade		
1st Year	94	25.2
2nd Year	122	32.7
3rd Year	157	42.1
School Residential Status		
Boarding Student	192	51.5
Religion		
Christianity	355	96
Islam	12	3.2
Traditional	3	0.8
Residential Status		
Urban	193	55.1
Socio Economic Status		
low	85	22.67
Medium	163	43.47
High	92	24.53
Parental Status		
Live With Both Parents	191	51.5
Live With Adopted Parents	22	5.9
Live With Single Parent	99	26.7
Live With Other Relatives	37	10
Live Alone	22	5.9

Prevalence and Drinking Patterns among Underage Students

The prevalence of alcohol use among all senior high school students recruited for the study was 44.8%. Underage drinking was 45% (CI: 36%-53%) among respondents below the age of 18 years with females (68%) reporting higher rates of alcohol use than males (32%). At a mean age of 14 years, with a minimum of 8 years over a range of 10, females (8 years old) reported a lower minimum age of alcohol onset than male(10 years). Per socioeconomic status of students, prevalence rate of alcohol use was 68%, 45% and 33% among the low, moderate and high social class respondents respectively.

Among respondents who had ever drank alcohol, we assessed the different drinking patterns exhibited by underage respondents. Fig 1 shows the various drinking patterns among respondents below the age of 18 years. Majority of them (89%) reported to be low risk drinkers. Also moderate drinking was reported among 11 per every 100 underage drinkers. About 15% of the respondents have ever binged. Recent binge drinkers in the past one month was 7 per 100 underage drinkers. Heavy drinking was reported among 13 per 100 underage drinkers.

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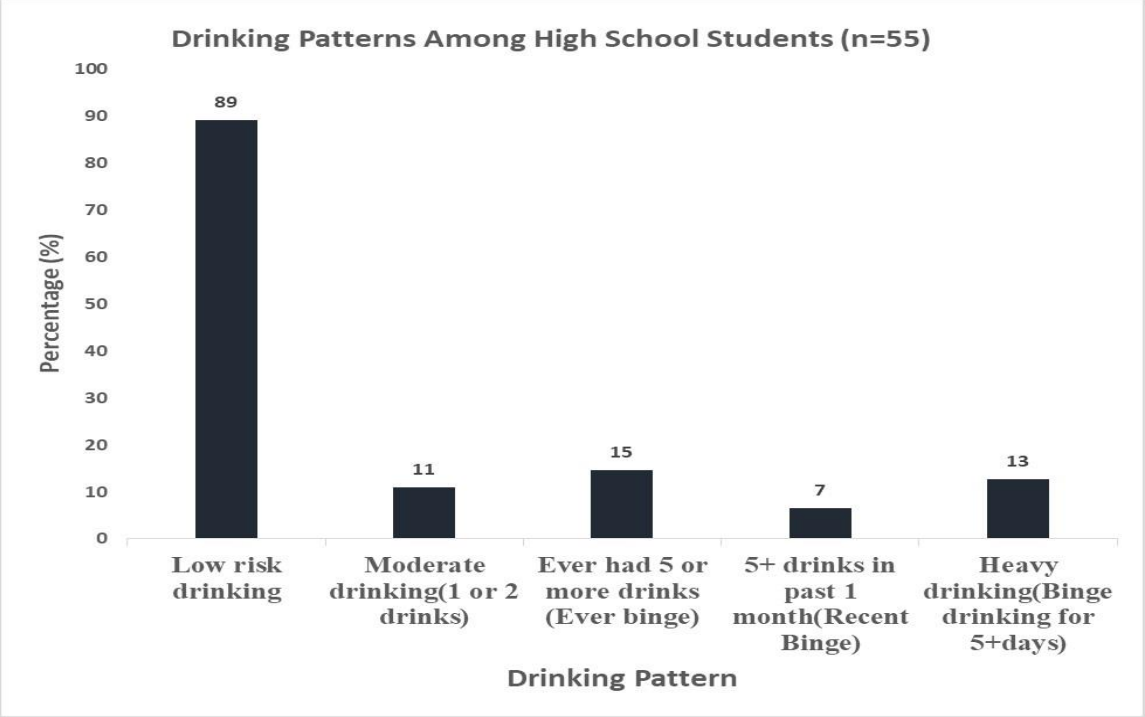

Fig. 1: Reported Drinking Patterns among Respondents, (N=55)

Source of Alcohol Exposure and Entities Blamed by Respondents for underage drinking

As illustrated in Table 2, Peers (35%) were the major reported source of exposure to alcohol by respondents. This was followed by media advertisements (24%). Other reported means of exposure to alcohol was through family members (16%) and social media (10%).

Respondents reported media advertisement (49%) to be responsible for underage drinking. 28% of the respondents also reported parents to be responsible for underage drinking. Youth themselves, public agencies and alcohol stores were also reported to be responsible for alcohol use among underage people.

TABLE 2: SOURCES OF ALCOHOL EXPOSURE (N=68) AND ENTITIES RESPNSIBLE FOR UNDERAGE DRINKING (N=149)

Source of Alcohol Exposure	n	%	Persons/Entities Responsible For Underage Drinking	n	%
Peers	22	35	Media Advertisements	73	49
Alcohol Advertisements	15	24	Parents	41	28
Family Members	10	16	Youths	25	17
Social Media	6	10	Public Agencies	22	15
			Alcohol Stores	17	11

Reported Consequences of Underage Drinking

We assessed consequences that respondents of drinking that respondents have ever experienced. As shown in Fig. 2, 27% have been victims of occasional drunkenness. Risky sexual related practices such as forced and coerced sex were also reported by 19% of students. Varying health problems (14%), bullying (10%), school absenteeism (6%) and accidents/injuries (8%) were also reported issues of underage drinking.

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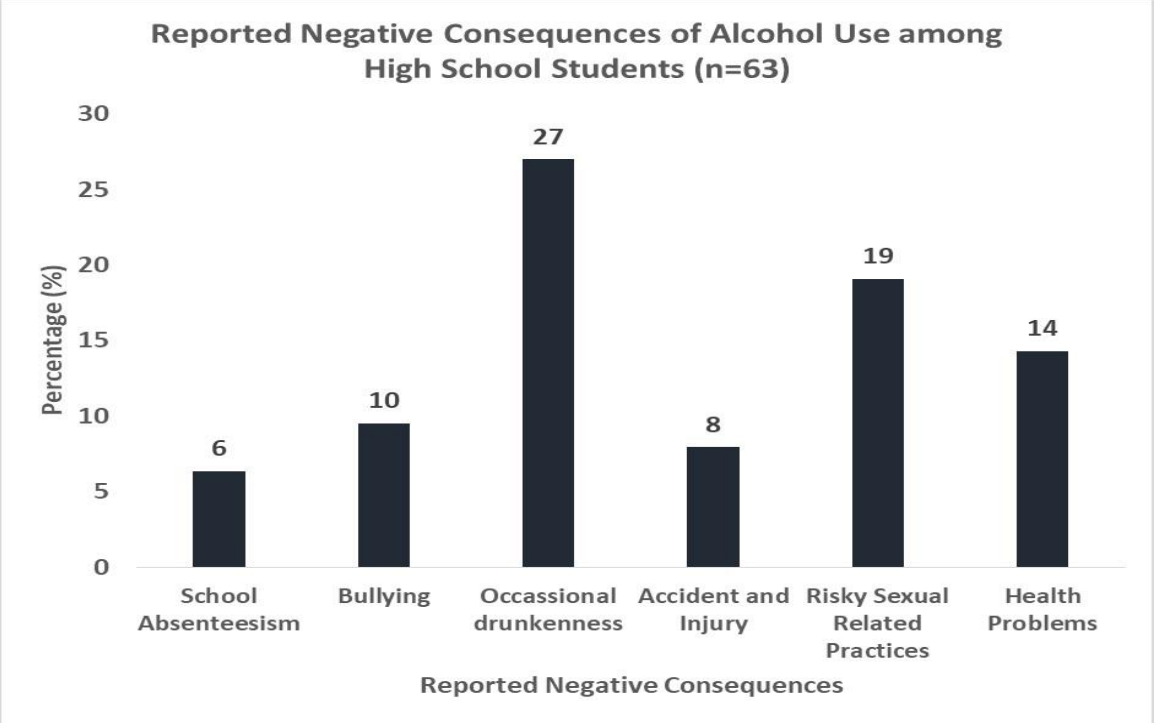

Fig. 2: Reported Negative Consequence of Alcohol use among Respondents, (N=63)

Respondents recommendations to reducing underage drinking

Media and school alcohol education (39%) was rated highly to reduce underage drinking. Advert ban (35), law enforcement (26%), Public presentation of alcohol victims (24%) and penalties (10%) were also recommended by study participants as shown in Fig 3.

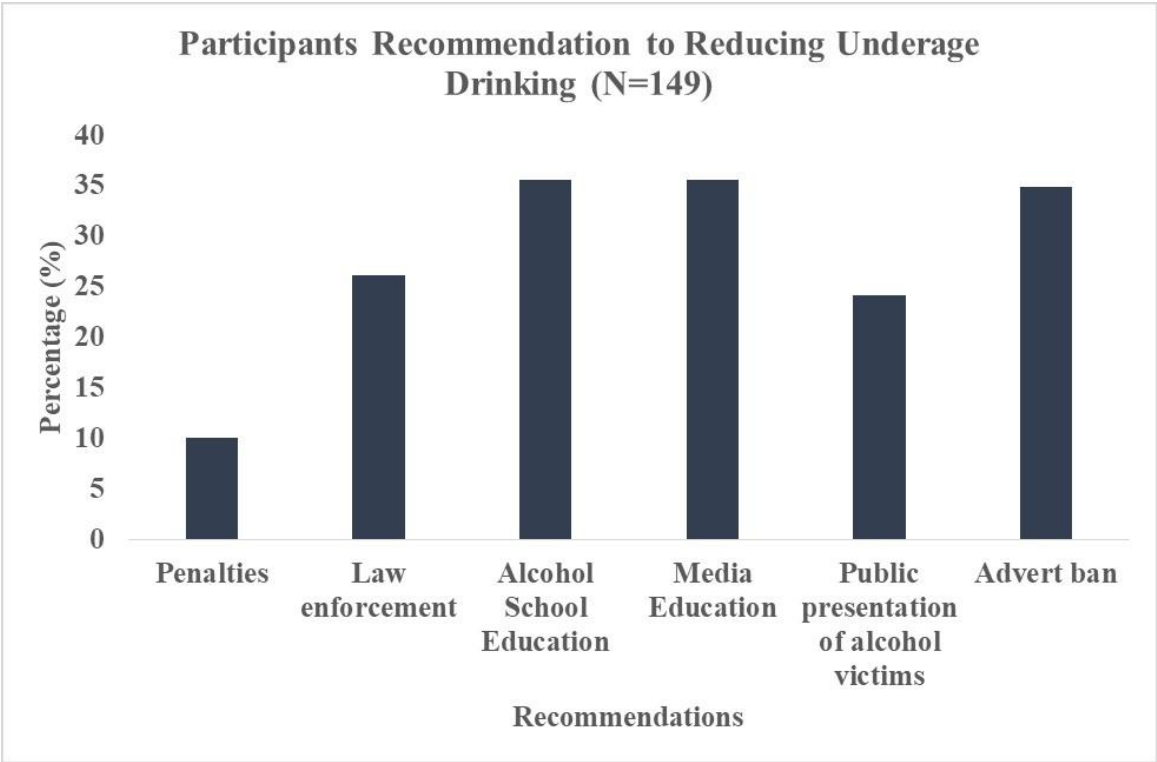

Fig. 3: Respondents Recommendations for Reducing underage drinking, (N=149)

4. DISCUSSION

Alcohol use among underage people was found to be 45% (CI: 36%-53%). This rate shows similarities and differences compared to studies done in Ghana, Africa and other parts of the globe. A study conducted in a nearby district closer to our study areas shows a similar rate of 43% [6]. However, compared to studies conducted by [15], students of the same age groups in South African high school reported about 94% of respondents who have never used any form of substance.

As opposed to several established studies which report male being at higher risk of alcohol use and early onset [15], [22], [23] , females reported a higher prevalence of alcohol use and early age of onset than males. Reasons to higher use of alcohol and early onset by female will require further studies to identify. However, the increased interest shown by females in the use of alcohol should be a public health issue that needs to be addressed by authorities.

Drinking patterns reported in this study is usually common among many populations of young adults. Majority of the students were within the low to moderate drinking pattern. Problematic drinking in the form of Binge drinking and heavy drinking was also observed among students. These form and pattern of drinking is a risk factor to alcohol dependency and global disease burden[24] and three-fourths of the economic costs due to excessive drinking [25]. Compared to the studies conducted in developed countries, this study ever binge drinking and recent binge drinking rate of 15% and 7% respectively was lower[26], [27].Furthermore, with the WHO reporting high alcohol use among European and American nations more than it does in African countries, [19], [28], [29] reported a higher rate of alcohol use among adolescents in the UK and US, than that reported in this study. Even though, the lower binge drinking reported in this study, it is difficult to assess the trend of this drinking pattern with time due to inadequate study done in Ghana and paucity of data on underage drinking. Continuous research is recommended to assess the trend to underage drinking pattern.

Peer, media advertisements, family members and social media were the major sources of alcohol exposure. Peer social networks and associations[27], [30] and having parents and families[29], [31] who use alcohol have been found to be associated with alcohol exposure and use. In Ghana, most families live together in an extended unit and often social through events such as funerals, weddings, etc. These events serves as platforms where family relatives and peers may offer alcohol to young people. Other avenues may exist where young children may use alcohol.

The urge, desire and curiosity to taste alcohol among youth is also exaggerated by media advertisements on TVs, radios, etc. Marketing exposure and low pricing of alcoholic products enhances drinking outcomes[32]. With the increasing alcohol advertisement on radio and TV young people tend to model and try it out. The competing marketing and advertisement of these products exposes and avail children who purchase at low prices. In view of this, it is no surprise that students reported advertisement to be mainly responsible for underage drinking. As part of study participant's recommendation to reduce alcohol consumption among high school students, advertisement ban was the recommendation made by 35% of the participants. Even though complete advertisement ban may seem difficult to accomplish by authorities, policies and laws that regulate these advertisement and exposure should be considered [33]. Also, students suggested media houses should educate them on the adverse effect on alcohol use and other forms of educational training and interventions that have proven successful in other parts of the world [1].

Parents and youth themselves were also believed to be responsible for underage drinking just as the sources of exposure to alcohol use. Alcohol stores and public agencies (regulatory bodies) were also reported to be responsible for underage drinking. Reason for blaming was not investigated in this study. However it must be noted that lack of clear cut policies and implementation on alcohol marketing underage and age- limit of alcohol sale and services [3], [4] by regulatory and public agencies hinders the fight against underage drinking in Ghana and other countries. As further suggested by [8], parents should safeguard their children from media influence by reducing their exposure to alcohol related scenes, music and other exposures.

Law enforcement by authorities was reported recommendation from study participants. However, this should be preceded by clear cut policies by legislation. According to the World health organisation, only 34% of its Member States reported having a national alcohol policy of which most of them are in developed countries [2]. Hence, policy addressing alcohol availability marketing, age-limit of sale and service and other related policies safeguarding underage drinking should be discussed and addressed[34] since comprehensive and stringent alcohol control policies are associated with lower prevalence and frequency of adolescent alcohol consumption and age of first alcohol use [35].

Reported consequences due to alcohol use such as occasional drunkenness, risky sexual practices, health problems, bullying, absenteeism and accidents were recalled by students. Several studies report similar findings[24], [29], [32], [36]. Just as it was reported in this work, risky and sexual behaviours such as having unprotected sex at early stages, coerced sexual practices and being victims of rape has been found to be higher among girls than boys [14]. Occasional drunkenness may result from binge drinking. Even though these known consequences are not new to alcohol studies, it must be noted that the objective is to identify evidence based basis for intervention with the study area.

Limitations to the study

As a cross sectional descriptive study, this study has few limitations that should not be overlooked. This study does not provide p values to ascertain the significance level the variables measured hence does not allow for extrapolation to the general population of High School students in Ghana. Furthermore it does not allow for conclusion on causality.

Also, with the use of self-reported questionnaire, there is the tendency of information bias as questions posed in the questionnaire may be subject to interpretation by the participant.

Despite these limitations, this study provides baseline data and information for further inferential studies. Also future studies should consider extending the scope to investigating reasons for respondent's choices.

5. CONCLUSION

This study assessed underage high school student's alcohol prevalence and patterns, sources of alcohol exposure, respondent's opinions on who is responsible for underage drinking, reported consequences and their recommendations to reduce underage alcohol use. The study reported higher prevalence of underage drinking among females than males. Respondents suggest law enforcements, alcohol advertisement ban and other approaches to this public health problem. However, further studies are recommended to ascertain risk factors and assess the feasibility of suggested interventions suggested by study participants. Also, future interventional school based programs that will help address adolescent alcohol use in Ghana should be explored.

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Conflict of Interest

None declared

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