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PATTERNS, CORRELATES AND KNOWLEDGE OF HEALTH IMPLICATIONS ASSOCIATED WITH ALCOHOL CONSUMPTION: A MIX-METHOD APPROACH

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ABSTRACT

Heavy consumers of alcohol are more likely to indulge in social vices due to cognitive impairment and students who engage in high alcohol intake are more likely to perform poorly in their academics. This study describes the patterns of alcohol consumption and investigated the correlates of and knowledge of health implications related with alcohol consumption in the studied locations. This study was a cross sectional research design and employed the mix-research methods. The quantitative data was generated through a survey with 400 respondents selected through a proportionate sampling design from Kwara State College of Education, University of Ilorin, and Federal Polytechnic, Offa. The qualitative evidence was captured through 10 in-depth interviews using a snowball sampling technique to recruit students who are heavy consumers of alcohol. The quantitative data was analysed using Stata version 14. The chi-square and multiple regression analysis results showed that amount of alcohol consumed and perception of were significantly associated with students' knowledge of health implications associated with alcohol consumption ($p<0.05$). Results of the multiple regression showed that students' knowledge on health implications associated with alcohol consumption contributed about 10% to amount of alcohol consumed and their perception of alcohol consumption. Results of the qualitative study revealed that students were of the view that moderate consumption of alcohol was needful with no negative health implications arising from it. The study concluded that students' perception of the health implications related with consumption of alcohol influenced amount of alcohol and measures taken to reduce quantity of alcohol consumed.

Contribution/Originality: This study is one of very few studies which have explored mix-method research technique to validate the correlates of alcohol consumption; and it study provides guidance to proffering solution to the perception and knowledge of students on health risks associated with alcohol consumption amongst college students.

1. INTRODUCTION

The World Health Organization Global Information System on Alcohol and Health which is an out-and-out unit for evaluating and monitoring the health situation and trends connected to alcohol consumption recorded about 2.5 million deaths annually due to harmful use of alcohol in Nigeria [1]. It was also reported that harmful use of alcohol is a serious health burden and approximately 3 million people, including about half a million of young people between the ages of 15 and 29 years die yearly. The World Health Organisation noted that alcohol consumption is not a contemporary phenomenon, but has been practiced for several decades and, it is a common

feature inmost social gatherings across regions of the world. Imperatively, recent increase in alcohol consumption among adult and young people calls for serious concern [1]. Consumption of alcohol could result into serious health issues such as cardiovascular complications, gastrointestinal complications, neurological complications, and psychiatric complications, cancers of the mouth, throat, esophagus, liver, colon, and breast. It could also result into liver diseases such as alcoholic hepatitis and cirrhosis, and other gastrointestinal complications [2].

In Nigeria, abuse of psychoactive substance, especially alcohol has been noted to be a subject of increasing health and social concern [3, 4]. The same studies have also identified adolescents and young adults as major groups involved in the consumption of alcohol. Though some people consume alcohol with intent for pleasure, particularly during social get-together and they consider it normal, which of course is the situation in many African communities; others take it in excess and this often lead to social and health complications. However, motives for the consumption of alcohol varies from the role of encouraging social cohesion to socio-political and economic structures, a means of showing off in public places, feeling high and sociable, to enhancing sexual pleasures among others [3-5]. The global prevalence of at which alcoholic beverages and other substances are being abused by young adults is quite high and demands exigent responsiveness as well as extensive studies. The fact is that the consumption and abuse of alcohol is not only detrimental but has serious consequences for the health status of students in higher institutions of learning**.** Previous studies in the country have predominantly investigated the side effect of alcohol consumption on students' academic success [4, 6-9]. A significant number of these studies have been more descriptive and have failed to investigate the causal-effects association between health implications and alcohol consumption among students of public higher institutions in Nigeria.

To be specific, most of the studies in the Nigerian context have explored the relationship between effects of illicit substance, drugs and alcohol abuse on students' academic performance [3, 10]. Also, there are dearth of specific contemporary studies that have employed the mix-method study approach in examining and exploring the correlates of alcohol addiction among students of public higher institutions of learning in Nigeria. Hence, there are dearth of empirical studies that have adopted the mix-method study approach to establish the link between alcohol consumption and its predictors. Therefore, this study addresses these limitations by describing and investigating the patterns and correlates of knowledge of health implications associated with consumption of alcohol among students of public tertiary institutions in Kwara State, Northcentral Nigeria. Retrospectively, the general objective of this study is to investigate the joint effects of quantity of alcohol consumed, perception about alcohol consumption, socio-demographic factors and knowledge of health implications associated with consumption of alcohol among students of selected public tertiary institutions in the studied areas.

2. LITERATURE REVIEW

The problems arising from alcohol consumption in young people are not the same with those in adults. In young people, the harmful effects of alcohol consumption often include changes in the relationship with family, peers and teachers, poor school performance, hostility, crime, public disorder and high-risk behaviors, such as driving after drinking, as well as risky sexual activities, involving unplanned pregnancy and sexually transmitted infections [11]. On the average, students who drink excessively are prone to high risks of indulging in activities, relationships and decisions that can compromise their health, safety and that of others than those who abstain [12].

Consequently, consumption of alcohol has ripple effects on different spheres of their lives. There are consequences on their physical health, social well-being, quality of life, and relationships with others, ability to cope with negative life events and their academics in particular. Drug and alcohol use is one of society's most challenging problems and has remained a major area of research concentration among psychology researchers [13]. The issue of sexual victimization is also taking precedence in areas of social and clinical research across various disciplines.

Wang, et al. [14] argued that adolescents and young adults in colleges consume more alcoholic drinks than other groups of individuals while the purpose as well as the pattern of consumption of these drinks varies widely

among societies. Studies further reported that too much consumption of alcohols have health consequences such as nutrition related chronic diseases which include overweight, obesity, diabetes, hypertension and coronary heart diseases [15-17]. Also, excessive consumption of alcohol have been linked with alcoholism, social vices, oesophageal cancer, liver cirrhosis, liver cancer, epilepsy and other traumatic outcomes that results in disability and loss of life [14, 18]. A number of factors have been recognized as the key reasons behind alcohol consumption across different communities. Onongha [19] in a study among students pointed out the intersections between hereditary and environmental factors on susceptibility to alcoholism among Nigerian youth. The interactions and web of relations amongst these factors are noted for the growing occurrence of drunkenness among this social category of young people. In espousing the relationship further, Aworemi, et al. [20] argued that these factors are further strengthened by the presence of peers or network of friends that are alcohol consumers, their proximity to places where such drinks are sold and their ability to afford alcoholic beverages with ease. Evidence from the similar research among students also showed that there are limited risks of familial transfer or transmission of alcoholism from parents to their children [21, 22]. The results from studies in this direction have revealed that families with the history of alcoholism are less likely to have children with the disorder, except where the individual has other supportive environmental factors that can trigger the tendency.

Relatively, Misuse of alcohol abuse appears universal and endemic among young people and adults [23]. Almost all major universities struggle with the issue of students' drinking [24]. An observation has also been made that the prevalence of alcohol use was higher among university students than in the general population [25]. It has been established that people with more depressive symptoms were 1.18 times more likely to engage in harmful alcohol use and that mental health was a major predictor of alcohol use [24].

Parental lifestyle plays noteworthy role on the development of the child in terms of the child's value system, as the home is the first agent of socialization where children are taught good morals. Consequently, in a home where both parents are drunks and the child is permitted at an early stage of his or her development to indulge in alcohol without any caution, such a child grows up to be an addict, such that he or she cannot stay a day without consuming alcohol or being drunk. The assertion made above is strongly supported by Onongha [19] study on the influence of some factors on alcohol use and abuse among education students of Osun State University, Nigeria. The study also affirmed that parents wield enormous influence on their children and in fact they wield primary influence on them Onongha [19]. Therefore, when parents take alcohol, they turn out to be drinking models to their adolescent children and this consequently has astonishing effect on their children Onongha [19].

Therefore, adolescent drinking behaviour can be a product of parental modeling. Peers on the other hand constitute a potent factor in adolescent alcohol use as the compelling need to fit into and belong to a group of friends may be a motivating factor in adolescents alcohol use [26]. In an earlier related study, Kypri, et al. [27] noted that students with peers have been reported to drink at higher levels than non-student peers. The study further disclosed that students' use and abuse of alcohol was significantly influenced by the degree of their attachment to parents and commitment to conventional activities [27]. Attachments identified in the study involved the degree, to which the students had affectionate or emotional ties to parents thereby seeing their parents as their role model. Curiosity, social burden and peer group impact are reported to be primary reasons for alcohol usage [28]. Traditional alcoholic drinks have been fragmenting of the social and religious life of Sub- Saharan Africa for decades [29]. Several explanations have been attributed to alcohol usage. One of these reasons was the modest relationship between stress and drinking. There was this general assertion that other reasons and determining factor of alcohol use could surpass stress-reduction reasons [29]. It was argued that alcohol could be used to improve positive disposition, a motive that has received contemporary research interest [29]. The study further affirmed that alcohol use played a role in many social activities, from the business lunch and parties to special occasions [29]. The benefits to alcohol drinkers during social occasions were greatly influenced by culture, the setting in which drinking occurred and expectations about alcohol's effects [29, 30].

The consumption of alcoholic drinks has severe effects on the health and well-being of the consumers, and, by extension, the lives of those around them [31]. Alcohol remained an intoxicant that was affecting a wide range of structures and processes in the central nervous system which, interacting with personality characteristics, associated behaviour and sociocultural expectations [32]. For example, alcohol use is one of the major causes of the global disease burden. Among men in the industrialized regions, alcohol ranks as the foremost cause of disabilities in the developing world, it ranks fourth [6]. Negative effects of alcohol consumption on ailment were well documented in the scientific literature [6, 9].

Thus, the consumption of alcohol has been identified as one of the major causal factors for intentional and unintentional injuries and harm among its consumers and to others [31]. These injuries and harm include interpersonal violence, suicide, homicide and drink–driving fatalities [33]. Heavy drinkers most time were prone to risky sexual behaviour, sexually transmitted diseases [34]. These range from acute maladies to a host of long-term chronic conditions, such as brain damage, high blood pressure, stroke, cancers, and muscle and bone diseases-as well as injury and its consequences. More so, evidence has emerged to indicate that alcohol consumption has a protective effect against coronary heart diseases in men above forty who drink in moderation, while the evidence for such a protective effect against coronary diseases in women remains inconclusive [34].

Relatively, medical research carried out in industrialized countries indicate that girls and women have far more biological vulnerability to alcohol-related problems [20, 34]. Furthermore, it is neurotoxic to brain development, leading to structural changes in the hippocampus in adolescence and reduced brain volume in middle age [12]. In recent years, overwhelming evidence has confirmed that both the volume of lifetime alcohol use and the combination of frequency of drinking and amount drunk per incident upturn the risk of alcohol-related harm, generally in a dose-dependent manner with the higher the alcohol consumption, the greater the risk [28, 35]. The frequency and proportion of unregulated alcohol intake have been noted to increase vulnerability and the chances of individual becoming more at risks of contracting certain diseases including those that are non-communicable ones [12].

3. THEORETICAL FOCUS: SOCIAL CONTROL THEORY

The social control theory by Hirschi [36] is also found to be relevant to this study as the study focuses on establishing the implications of alcohol consumption on health wellbeing of students of higher institutions. The study is situated on the social control theory which traces the incidence of alcohol use and abuse among students in relation to four fundamental components of attachment, commitment, and involvement and belief system. Hirschi's social control theory has been exclusively used on deviant behaviours, such as delinquent acts and drug use as well as alcohol use and addiction, rather than deviant roles and identities. The key to such prevention was effective socialization, which is a long process starting in childhood and lasting into adulthood. Hirschi on this note, pin-points families, peers, and schools as institutions having the most insightful impact on each of our lives, especially as children and adolescents [36].

Also, the study discloses that parental lifestyle, attachment, peer influence and commitment to conventional activities have significant impact on students' frequency of alcohol use and abuse. For Hirschi, delinquent behaviours, like drug use and binge drinking which in recent times is common among students, would be a likely outcome of ineffective ties to these things, that is, improper socialization importance. This implies that the incidence of alcohol use and abuse among students of tertiary institution shows that the establishment of a strong moral bond between the students and society (mostly parents and conventional activities like reading) would promote conformity to existing ethics and in the long-run prevent the involvement of students in risky behaviours. According to social control theory, individuals with strong attachments are less likely to engage in deviant behaviour, commitment-aggregate investment of time, energy, and resources in conventional activities such as getting an education or holding a job.

One of the fundamental assumptions in Hirschi [36] social control theory is that humans possess the capacity and tendency to substitute or change their acceptance of the normative across their life course expect there are strict guidance and control from the society. The temptation to break commonly accepted rules or norms are every present within network of relations and social structures. Socialisation, a life course process and across different settings and relationships is one of the perceived means and procedure that can ensure adherence at either public or private spheres to the norms and expectations in a social setting. Right from childhood to adulthood, individuals are exposed to various agents and social institutions that socializes individuals and social categories into various roles and expectations. In this direction, institutions like families, religion, schools and law are critical in providing the needed socialization at any point in time [36]. Life in tertiary schools also provide suitable environment for indulgence as less social control on access and intake of alcohol prevails. Thus, societal and environmental influence rather than having knowledge of implications of alcohol steer up the desire for alcohol consumption among tertiary institution students Hence, the theory of social cognitive underpins this study.

4. METHODS

4.1. Research Design, Data Sources, Sample Size and Sampling Technique

The study employed both the quantitative and qualitative methods to a mixed-method approach to examine and explore patterns and correlates of knowledge of health risk associated with alcohol consumption among undergraduates of government-owned higher institutions of learning in in Kwara State, Northcentral Nigeria. This study adopted the cross-sectional survey method, and elicited information form 400 undergraduates from three purposively selected public tertiary institutions. The snowball research technique was also adopted. The study quantitative data were collected through the administering of a well-designed questionnaire to legible respondents. The qualitative data was sourced through the conduction of in-depth interviews (IDIs) among legible respondents in the studied locations. Three (3) IDIs were conducted each among undergraduates in Federal Polytechnic, Offa and Kwara State College of Education, Oro while four (4) IDIs were conducted in University of Ilorin Thus, a total of ten (10) IDIs were conducted across the studied higher institutions of learning. The selected sample size in each of the studied higher institutions of learning is based on the total number of students in each of these institutions. Using the Slovin's formula, n = N/ (N+1) e^2. Total number of students was obtained from personnel office in the studied institution.

Where, n = the required sample size

$$n = \frac{N}{(N+1)e^2}$$

e^2 = Prevalence rate = 0.5

$$n = \frac{80646}{(80647)x(0.05x0.05)} = \frac{80646}{201.6} = 400$$

4.2. Research Variables

The dependent variable of the study is knowledge of health risk associated with consumption of alcohol. The outcome variable was aggregated into respondents (students) with adequate, inadequate and knowledge and students with indifferent knowledge. The independent variables of the study were patterns of alcohol consumption and correlates of knowledge of health risks associated with alcohol consumption. patterns of alcohol was measured by quantity of alcohol consumed on daily, weekly and monthly basis while correlates of alcohol consumption were captured as measures taken in reducing among of alcohol consumed, and awareness/perception about alcohol

Students' awareness about consumption of alcohol aggregated into students with high level and those with low level of awareness. Students' background amongst which included gender, level of study, family type, income earned or stipend received, age were introduced as confounding factors in the study.

4.3. Data Analysis

The primarily sourced data were sorted, cleaned, coded and analysed. Every statistical analyses carried out in this study was performed using Stata version 14. The background information of the respondent was analysed using the appropriate descriptive statistics (Tables, Graphs, Percentage distributions, Mean scores were derived and standard deviation for count data). Component analysis technique was used to derive the aggregate as appropriate in this study. The chi-square inferential statistics was used to show the relationship between the dependent variable (Student knowledge of health implications associated with alcohol consumption) and the categorised independent variables (perception of alcohol consumption, frequency of alcohol consumption and measures taken to regulate amount of alcoholic consumed). Also, the multivariate regression was adopted to establish the causal-effect association between the dependent and independent variables of the study. The confidence level for this study was set at 95%. Accordingly, the analysed results of the study if found to be < 0.05 were considered as being significantly associated while the qualitative data were analysed through content analysis.

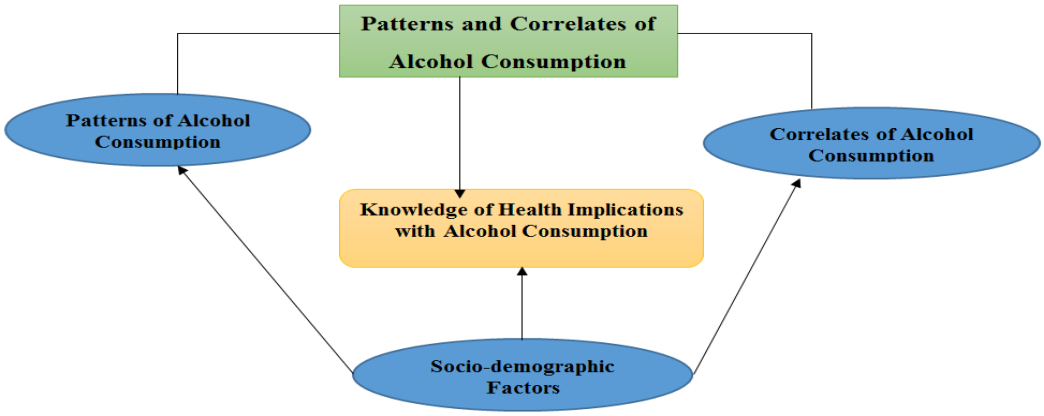

Figure-1. Conceptual model showing patterns of alcohol consumption and linking students' knowledge of health implications to correlates of alcohol consumption.

Figure 1 describes patterns, and the interactional effect between Socio-demographic factors, correlate of alcohol consumption, alcohol consumption and knowledge of health implications with alcohol consumption.

5. RESULTS

5.1. Respondents' Background Information

Table 1 presents the results of the respondents by their background information. Results showed that about two-thirds (63 out of 247) of the students from University of Ilorin were aged 21-29 years, nearly one-third (8 out of 25) of Kwara State College of Education students were also from ages 21-29 years while one-third (42 out of 128) students from Federal Polytechnic, Offa were less than 20 years old. While no fewer than two-thirds (168 out of 247) of respondents from University of Ilorin were male students, 52 out of 128 respondents from Federal Polytechnic, Offa and 16 out 25 respondents from Kwara State of Education were female students respectively. Our results show that majority (183 out of 247) of the students from University of Ilorin were living in on-campus hostels, a larger numbers of students from Federal Polytechnic, Offa (79 out of 128) and Kwara State of Education (17 out of 25) were living in hostels located outside their school campuses. Results by respondents' marital status a larger proportion of the students from three institutions were not yet married – 183 out of 247 for respondents from University of Ilorin; 101 out of 128 respondents from Federal Polytechnic, Offa and 20 out of 25 respondents

from Kwara State of Education. Results by ethnicity of the respondents show that at least three in every four of the respondents from University of Ilorin (186 out of 247), Federal Polytechnic, Offa (96 out of 128) and Kwara State of Education (20 out of 25) were Yoruba people. More than two-thirds (169 out of 247) of the respondents from University of Ilorin were from polygamous homes, more than half (13 out of 25) of respondents from Kwara State of Education were from monogamous families and approximately half (63 out of 128) of the respondents from Federal Polytechnic, Offa were also from monogamous homes. Results by household size show that while nearly 70% (171 out of 247) of the respondents from University of Ilorin where from a household with more than five relative or family members, no fewer than 75% of the respondents came from Federal Polytechnic, Offa (104 out of 128) and Kwara State of Education (19 out of 25) with the same number of family household size. Only about half (122 out of 247) of the respondents from University of Ilorin were living above the poverty line of US$2.00 per day. Results further show that about 62% of respondents from Federal Polytechnic, Offa were living below the poverty line of less than US$2.00 on daily basis. Similarly, no fewer than three-quarters (19 out of 25) of respondents from Kwara State of Education were living below the poverty line.

Table-1. Percentage distribution of respondents by background information.

	University of Ilorin	Federal polytechnic, Offa	Kwara state college of education
Variables	**(n = 247)**	**(n = 128)**	**(n = 25)**
Age (In years) < 20	9.7	32.8	32.0
21-29	63.2	60.9	64.0
≥30	17.1	6.3	4.0
Gender			
Male	68.0	59.4	36.0
Female	32.0	40.6	64.0
Mode of study			
Full time	86.2	73.4	72.0
Part-time	13.8	26.6	28.0
Accommodation type			
On-campus	73.3	38.3	32.0
Off-campus	26.7	61.7	68.0
Marital status			
Single	74.1	78.9	80.0
Married	21.5	20.3	20.0
Separate/Divorce/Widowed	4.4	0.8	0.0
Religion			
Christianity	73.3	53.1	56.0
Islam	26.7	39.8	44.0
African traditional	0.0	7.0	0.0
Ethnicity			
Yoruba	75.0	75.0	80.0
Igbo	18.2	12.5	12.0
Hausa	5.7	7.0	8.0
Others	7.3	5.5	0.0
Family type			
Monogamous	68.4	49.2	52.0
Polygamous	31.6	50.8	48.0
Monthly stipend or income			
≤ #10,799 (< US$30)	6.1	4.7	4.0
#10,800 - #21,599 (> US$30<US$60)	44.5	61.7	76.0
≥#21, 600 (≥US$60)	49.4	33.6	20.0
Household size			
< 5 relatives	30.8	18.8	24.0
>5 relatives	69.2.	81.2	76.0

Source: Field survey, 2019.

5.2. Quantity of Alcohol Consumption among Tertiary Institution Students

Table 2 shows the results of a survey of respondents' alcoholic consumption from University of Ilorin, Federal polytechnic, Offa and Kwara State College of Education, Oro. The consumption per day depicts that undergraduates from University of Ilorin consumed more beer that is (1.99) than undergraduates from Federal Polytechnic, Offa which is (1.64). Also, the results show that undergraduates from Kwara State College of Education, Oro of (2.0) consumed more dry gin than respondents from University of Ilorin. Furthermore, the results showed that (1.54) of undergraduates from Federal Polytechnic, Offa consumed more palm wine on the average than the undergraduates from University of Ilorin which is (1.37). The results also show that undergraduates from University of Ilorin consumed more energy drinks on a monthly basis that is (2.19) than undergraduates from Kwara State College of Education, Oro which consumed (2.0). Similarly, more herbal alcoholic drinks were consumed by undergraduates from Kwara State College of Education, Oro which is (2.0) on monthly basis than undergraduates from Federal Polytechnic, Offa who constitute (1.81). The results also showed that herbal alcoholic drinks were consumed more by the undergraduates from University of Ilorin on monthly basis which is (2.14) than on daily basis of (1.27). Also, the results revealed that more dry gin was consumed by undergraduates in Federal Polytechnic, Offa on weekly basis of (1.67) than on daily basis with (1.54). More so, on the average, the study reviews that the students of Kwara state College of Education, Oro consumed palm wine on daily basis which is (2.0) than on weekly basis of (1.0).

Also, the results of the qualitative study in view students' knowledge about the health implications associated with consumption of alcoholic drinks or beverages are summarized below:

> *Alcohol, when alcohol is not consumed in excess, it is good for the body; though, the hazard lies in excessive consumption particularly if one becomes an alcohol addict. It is true that alcohol can lead to serious cardiac ailment. I have seen individuals diagnosed of serious ailment due to excessive consumption of alcohol over long period of time. The condition is aggravated if such an alcoholic addict appetite has been substituted by his or her urge for alcoholic beverages (IDI with a 25 year Old Male HND II, Federal Polytechnic, Offa, 2019).*
>
> *Alcohol may have some deleterious effects on its consumer but the fact remains that alcohol is not as harmful as its being painted. Although a few students died as a result of excessive consumption of alcohol in institution; however, more of these deaths have been attributed to other factors but not alcohol. Alcohol may become injurious if one is not eating well or taking it more than required. I have been consuming alcohol since my high school days and I have never for once being diagnosed with ailment related to alcoholism or found myself in one mischievous act or another (IDI with a 27 year Old, Male 500 Level, University of Ilorin, 2019). l cannot see myself having chronic ailments such as lever cirrhosis, heart seizures, diabetes mellitus and the likes due to my excessive consumption of alcohol because I always drink responsibly and also eat well. Occasionally, I drink and drive, yet see the road clearly. As fa as am concerned, road accidents are not majorly caused due to alcoholism but bad conditions of roads in the country. In fact, moderation in consumption of alcohol can neither lead to rough driving or any of the mentioned chronic or ailments (IDI with a 24 year, Male, 300 Level Old Student, Kwara State College of Education, 2019).*

Table-2. Distribution of respondents according to quantity of alcohol consumed.

Variables	University of Ilorin					Federal polytechnic Offa					Kwara state college of education				
	1 Bottle (%)	2-3 Bottles (%)	3-4 Bottles (%)	>4 Bottles (%)	Mean	1 Bottle (%)	2-3 Bottles (%)	3-4 Bottles (%)	>4 Bottles (%)	Mean	1 Bottle (%)	2-3 Bottles (%)	3-4 Bottles (%)	>4 Bottles (%)	Mean
Alcohol per day															
Beer	134(54.3)	83(33.6)	15(6.1)	15(6.1)	1.99	19(14.8)	97(75.8)	6(4.7)	6(4.7)	1.64	0(0)	25(100)	0(0)	(0)	2.0
Dry gin	151(61.1)	71(28.7)	13(5.3)	12(4.9)	1.95	22(17.9)	96(75)	4(3.1)	6(4.7)	1.54	0(0)	25(100)	0(0)	0(0)	2.0
Palm wine	143(57.9)	77(31.2)	15(6.1)	12(4.9)	1.95	21(16.4)	97(75.8)	6(4.7)	4(3.1)	1.52	0(0)	25(100)	0(0)	0(0)	2.0
Energy drinks	172(69.6)	47(19)	17(6.9)	11(4.5)	1.23	111(86.7)	8(6.3)	5(3.9)	4(3.1)	1.46	25(100)	0(0)	0(0)	0(0)	1.0
Herbal drinks	185(74.9)	34(13.8)	14(5.7)	14(5.7)	1.27	112(87.5)	4(3.1)	5(3.9)	7(5.5)	1.42	100(25)	0(0)	0(0)	0(0)	1.0
Alcohol per week															
Beer	125(50.6)	81(32.8)	23(9.3)	18(7.3)	2.05	14(10.9)	99(77.3)	9(7)	(4.7)	1.73	0(0)	125(100)	0(0)	0(0)	2.0
Dry gin	136(55.1)	72(39.2)	24(9.7)	15(6.1)	2.96	16(12.5)	96(75)	9(7)	7(5.5)	1.67	0(0)	25(100)	0(0)	0(0)	2.0
Palm wine	163(66)	49(19.8)	21(8.5)	14(5.7)	1.37	105(82.)	6(4.7)	10(7.8)	7(5.5)	1.54	25(100)	0(0)	0(0)	0(0)	1.0
Energy drinks	166(67.2)	43(17.4)	25(10.1)	13(5.3)	1.38	104(81.3)	6(4.7)	11(8.6)	7(5.5)	1.53	25(100)	0(0)	0(0)	0(0)	1.0
Herbal drinks	141(57.1)	70(28.3)	24(9.7)	12(4.9)	2.06	16(12.5)	94(73.4)	12(9.4)	6(4.7)	1.62	0(0)	25(100)	0(0)	0(0)	2.0
Alcohol per month															
Beer	112(45.3)	66(26.7)	25(10.1)	44(17.8)	2.16	13(10.2)	95(74.2)	6(4.7)	14(10.9)	2.0	0(0)	25(100)	0(0)	0(0)	2.0
Dry gin	124(50.2)	66(26.7)	28(11.3)	29(11.7)	2.16	12(9.4)	96(75)	8(6.3)	12(9.4)	1.85	0(0)	25(100)	0(0)	0(0)	2.0
Palm wine	121(49)	72(29.2)	23(9.3)	31(12.6)	2.14	14(10.9)	95(74.2)	6(4.7)	13(10.2)	1.85	0(0)	25(100)	0(0)	0(0)	2.0
Energy drinks	125(50.6)	66(26.7)	21(21)	35(14.2)	2.19	12(9.4)	94(73.4)	7(5.5)	15(11.7)	1.86	0(0)	25(100)	0(0)	0(0)	2.0
Herbal drinks	132(53.4)	64(25.9)	18(7.3)	33(13.4)	2.14	15(11.7)	93(72.7)	7(5.5)	13(10.2)	1.81	0(0)	25(100)	0(0)	0(0)	2.0

Source: Fieldwork survey, 2019.

5.3. Students' Perception about Alcohol Consumption

Results on respondents' perception on alcohol perception presented in Table 3 shows that nearly two-thirds (65.3%) of the students held a negative perception about consumption of alcohol. 89% of the students held negative perception that alcohol boosts their reading ability. Similarly, no fewer than eight in every ten students had negative assumption that consumption of alcoholic beverages or drinks aid effective communication (88%), sound sleep (85.5%) and stimulates comprehension while reading (83.8) respectively. On the other hand, more than more than half (54.5%) of the respondents perceived that consumption of alcohol reduces their appetite, and two in every three (66.5%) of the students positively agreed that they have lost friendship intimacy as a results of consumption of alcohol beverages. Also, the results show that one-quarter (25%) of the respondents admitted that alcohol consumptions increase their libido, and nearly the same proportion (24.7%) positively admitted that alcohol consumption increases their level of self-esteem. Equally, one-quarter (25%) of the students held a positive perception when it comes to being active, agile and alcohol consumption. Contrarily, no fewer than three in every four students had negative perception when it comes to alcohol consumption and relating well with their friends. Results show that 61% of the students did not see alcoholics as a waste of money. Likewise, about 82% disagreed that alcohol consumption instigates aggressiveness in them while one in every five (20.7%) students admitted that alcohol consumption sometimes distorts their memory, thus, sense of reasoning. Results of the study further show that (80.5%) disagreed that moderate consumption of alcoholic drinks is not a violation of their religious doctrine while about 30% were of a positive view that drinking of alcoholic drinks is healthy as long as it is not consumed in excess. More than one-third (38.2%) of the students believed that it is healthy to consume alcohol beverages at times; in line with this assertion, more than three-quarters (77.3%) of the students held a negative opinion about being drizzled or inactive after consuming alcoholic beverages.

Table-3. Distribution of respondents by their perception about alcohol consumption.

Variables	Positive (%)	Negative (%)	Ranking of (+) perception
Alcohol is not a waste of money.	244(61.0)	156(39.0)	1st
Alcohol boosts reading ability.	44(11.0)	356(89.0)	19th
Alcohol aids effective communication.	48(29.0)	352(88.0)	7th
Alcohol reduces appetite.	218(54.5)	182(45.5)	3rd
I cannot sleep well without taking alcohol.	58(14.5)	342(85.5)	18th
Consumption of alcohol sometimes instigates aggressiveness.	73(19.2)	327(81.8)	14th
I skip classes sometimes as a result of alcohol consumption.	69(18.2)	331(82.8)	16th
I sometimes feel drizzles and inactive after consuming alcohol.	91(22.7)	309(77.3)	10th
Alcohol consumption drives away some close friends from me.	266(66.5)	134(33.5)	2nd
I effortlessly pick-up argument which sometimes lead to fight after taking alcohol.	77(19.2)	323(80.8)	14th
Alcohols make me have a high level of self-esteem.	99(24.7)	301(75.3)	9th
Alcoholic drinks are healthy as long as it is not consumed in excess.	118(29.5)	282(70.5)	6th
Taking alcoholic beverages stimulates comprehension while studying.	65(16.2)	335(83.8)	17th
It is healthy to consume alcoholic beverages at times.	113(38.2)	287(71.8)	4th
Taking alcoholic beverages makes me relate well with my friends.	87(21.8)	313(78.2)	11th
Alcohol consumption increases one's libido.	138(34.5)	262(65.5)	5th
Taking alcoholic beverages makes me more active and agile.	100(25.0)	300(75.0)	8th
Taking alcoholic beverages moderately is not a violation of one's religion doctrine.	78(19.5)	322(80.5)	13th
Alcohol consumption has never distorted made me loss my sense of reasoning.	83(20.7)	317(79.3)	12th
Aggregate score	**Positive (%)**	**Negative (%)**	
Students' perception about alcohol consumption.	139(34.2)	261(65.3)	

Source: Fieldwork survey, 2019; *Note that (+) denotes "positive".*

Results on the perception of students about alcohol consumption in this study is supported by the in-depth interview conducted amongst respondent who stated as follows:

Alcoholic beverages makes me tipsy on every occasion I consume it more than I should, nevertheless, as far as I am concerned, alcohol increases my level of boldness and confidence. Also, what I can say about myself on every occasion I take alcohol before attending lecture is that I always comprehend whatever my lecturer is teaching me clearly. At times I loss appetite when I drink alcohol in excess but that has not hindered me from sleeping well (IDI with a 27 year Old, Male, 500 Level, University of Ilorin, 2018).

Is there anything wrong with drinking a little amount of origin herbal alcoholic drinks or our local palm wine …well, as far as am concern taking alcoholic beverages, especially palm wines and energy drinks makes me smarter, agile, relate well with ladies, of course nimble in bed with my girlfriend… I have seen some individuals, or let me say weak-drinkers become aggressive or start a fight on every occasion they consume alcohol in excess but for me, I hardly could have a sound sleep without taking alcoholic drinks. In fact, I will recommend a little alcohol for every married people or those in serious relationship because it boosts sexual performance…laughter. Of course, science confirms that too. I think alcohol is not as harmful as portrayed by some moralists, especially by Christian and Muslim clergies in this country…well taking anything in excel is not healthy, so also is excessive consumption of alcoholic drinks (IDI with a 25 year Old Male HND II, Federal Polytechnic, Offa, 2019).

As far as I am concern, I consume alcoholic drinks reasonably and this has not in any way affected my primary purpose of being in this school that is my studies. However, the problem with a good number students that drink is that they are fond of consuming alcohol beyond their carrying capacity; alcohol is harmful whenever it is consumed in excess. Any time I observe that I am beginning to feel dizzy due to alcohol consumption, I stop further consumption and I head to my room for a sound sleep. Indeed, I have discovered that taking alcohol in reasonably aids me to read and assimilate better than when not under alcohol influence while reading (IDI with a 24 year Old, Male, 300 Level, Kwara State College of Education, 2019). Taking alcoholic drinks or beverages is sometimes healthy and of course very good for the body. However, it could be problematic only when it is consumed in excess; and this is common among students, especially amongst the freshmen. There are cases where freshmen in this school had to be rushed to the University Health Centre as a result of their excessive consumption of alcohols. So, it is common to see some students misbehaving after taking alcoholic drinks beyond their capacity (IDI with a 25 year Old, Male 200 Level, University of Ilorin, 2019).

5.4. Measures Taken by Respondents to Reduce Alcohol Consumption

Table 4 shows that 62(25.1%) of the respondents from University of Ilorin took tom tom to reduce the amount of alcohol consumed, 85(34.1%) resolved to drinking of water, while 105(42.1%) took some drugs and 53(21.3%) of the respondents from University of Ilorin avoided heavy drinking. The results also showed that 71(55.5%) of the respondents from Federal Polytechnic, Offa opted to drinking a lot of water as a measure to reduce the most effective measure to reduce amount of alcohol consumed, 68(53.1%) resolved to taking some drugs to reduce the effect of alcoholic drinks consumed, while 64(25.9%) of the respondents from Federal Polytechnic, Offa claimed that they took less quantity of alcoholic drinks with the intent of reversing the possible effects of alcohol on them. Furthermore, the results showed that 16(64%) of the respondents from Kwara State College of Education, Oro

resolved to taking a lot of water as a measure to reduce the amount of alcohol consumed, while 6(24%) resolved to taking some drugs to reduce the effect of alcoholic drinks consumed 8(32%) took less quantity of alcoholic drinks as a measure taken to avoid becoming drunk or vulnerable to the consequences of heavy intake of alcohol.

Table-4. Distribution of respondents by measures taken to Reduce amount of alcohol consumed.

	University of Ilorin		Federal polytechnic, Offa		Kwara state college of education	
Variables	**Yes (%)**	**No (%)**	**Yes (%)**	**No (%)**	**Yes (%)**	**No (%)**
I take tom tom (mint sweet) to reduce the effect.	62(25.1)	185(74.9)	15(11.7)	113(88.3)	0(0)	25(100)
I drink a lot of water.	85(34.1)	162(65.9)	71(55.5)	57(44.5)	16(64)	9(36)
I take some drugs to reduce the health effect of alcohol.	105(42.1)	142(57.5)	68(53.1)	60(46.9)	14(56)	11(44)
I ensure I avoid those who drink heavily.	53(21.5)	194(78.5)	39(30.5)	89(69.5)	6(24)	19(76)
I take 1 bottle daily instead of 2.	53(21.5)	194(78.5)	64(25.9)	183(74.1)	8(32)	17(68)

Source: Fieldwork survey, 2019.

In support of the findings Table 4 of the quantitative aspect of this study, the respondents interviewed explained as follows:

> *As for me, I know that I can go beyond 2 bottles of beer and hardly have I shot it. All the same whenever I am drinking at an occasion and the beer seems to be endless, I stop drinking immediately when I find myself visiting the rest room more than usual (IDI with a 25 year Old, Male, HND I, Federal Polytechnic, Offa, 2019).*
>
> *I don't usually drink alone, so when I am getting to saturation point, I always stop by getting up or coming up with stories that will make my drinking rate slower. However, on a few occasions when I go to drink alone, my escape measure is to walk away (IDI with a 21 year, Male, 200 Level Old Student, Kwara State College of Education, 2019).*
>
> *I know my limit; once am saturated, I leave the scene. However, sometimes, I may find it difficult to walk away, especially when the drinks are not paid for by me…what I always do in such case is that I slow down the time spent on drinking. (IDI with a 27 year Old, Male 500 Level, University of Ilorin, 2019).*

Table-5. Chi-square tests showing the relationship between frequency of alcohol consumed and students' knowledge of health implications associated with alcohol consumption.

Variable **Frequency of alcohol consumption**	***X²*-value**	**Degree of freedom**	**p-value**	**Decision/Remark**
Daily average consumption.	63.667	2	0.000***	Significant
Weekly average consumption.	78.833	2	0.000***	Significant
Monthly average consumption.	133.512	2	0.000***	Significant

Note: *Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001.

The results as presented in Table 5 show that daily average amount of alcohol consumed was significantly associated with students' knowledge of health risks associated with alcohol consumption (X^2 = 63.667; p<0.001). Likewise, the results showed that the average amount of alcoholic drinks consumed on weekly (X^2 = 78.833; p<0.001) and monthly basis (X^2 = 133.512; p<0.001) was significantly influenced by the extent of their knowledge on the health risks that were associated with alcohol consumption. Therefore, these findings showed that frequency of alcohol consumption and knowledge of health risks associated with alcohol consumption among students of

tertiary institutions (University of Ilorin, Federal Polytechnic, Offa and Kwara State College of Education) were significantly related ($p<0.05$).

Table-6. Chi-square tests showing the relationship between students' knowledge of health implications associated with alcohol consumption and their socio-demographic characteristics.

Variable Socio-demographic characteristics	X^2-value	Degree of freedom	p-value	Decision/Remark
Age	62.396	8	0.000***	Significant
Gender	15.028	2	0.001**	Significant
Level of study	113.187	12	0.000***	Significant
Family type	12.744	2	0.002**	Significant
Religion	16.727	4	0.002**	Significant
Income received	17.058	6	0.009**	Significant

Note: *Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001.

The results of the study as presented in Table 6 reveal that students' knowledge of health risks of alcohol consumption was not only influenced by their age ($X^2 = 62.396$; $p<0.001$) but also by gender ($X^2 = 15.028$; $p<0.01$). Similarly, students' knowledge of health risk associated with alcohol consumption was found to be significantly influenced by student's level of study ($X^2 = 113.187$; $p<0.001$), and family type ($X^2 = 12.744$; $p<0.01$). Likely, the results showed that students' knowledge of health risk associated with alcohol consumption was significantly related to religion ($X^2 = 16.727$; $p<0.01$), and monthly income received by students ($X^2 = 17.058$; $p<0.00$). Therefore, the socio-demographic characteristics (gender, age, level of study, family type, religion, income level) of tertiary institutions students in the study areas and knowledge of health risk associated with alcohol consumption were established to be significantly related ($p<0.05$).

Table-7. Chi-square tests showing the relationship between students' knowledge of health implications associated with alcohol consumption and perception about of alcohol.

Variable Perception on alcohol consumption	X^2-value	Degree of freedom	p-value	Decision/Remark
Positive	389.782	4	0.000***	Significant
Indifferent				
Negative				

Note: *Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001.

Table-8. Linear multiple regression results showing association between quantity of alcohol consumed, perception about alcohol consumption and students' knowledge of health implications associated with alcohol consumption.

Variable Frequency of alcohol consumption	ß	Std. Err.	t-stat.	p> |t|	95% C.I.
Daily average consumption	-0.341	0.127	-2.68	0.008**	-0.591 -0.091
Weekly average consumption	0.489	0.123	3.96	0.000***	0.246 0.731
Monthly average consumption	-0.330	-0.081	-4.10	0.000***	-0.489 -0.172
Perception on alcohol consumption					
Positive	-0.232	0.048	-4.82	0.000***	-0.327 -0.137
Indifferent					
Negative					
_cons	2.993	0.199	15.04	0.000	2.602 3.385
R^2 = 0.1094					
Adjusted R^2 = 0.1004					
F (4, 395)					
Prob. > F (0.000***)					

Note: *Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001.

Table 7 showed that knowledge of health risk associated with alcohol consumption among students of tertiary institutions (University of Ilorin, Federal Polytechnic, Offa, and Kwara State College of Education) was

significantly influenced by the students' perception about consumption of alcohol (X^2 = 389.782; p<0.001). Thus, the consumption of alcoholic drinks by these students was influenced by the perception they have developed about alcohols.

Multivariable Regression Model Specification: $Y = a + b_1 X_1 + b_2 X_2 + b_3 X_4 + b_3 X_4$

Reject H_0 if p-value is less than alpha (sig.), otherwise, accept it.

Note: in the model above, Y is student knowledge of health risk associated with alcohol consumption, a is the intercept, b_i's are the slopes,; X_1 amount of alcoholic drinks consumed on daily basis; X_2 is amount of alcoholic drinks consumed on weekly basis; X_3 is amount of alcoholic drinks consumed on monthly basis; X_4 is students' perception on alcohol consumption; n=4.

Decision: since the p-value (0.000) < 0.05, we have sufficient statistical evidence from the study's analysis to reject the hypothesis (H_0) that students' knowledge of health risks associated with alcohol consumption and their perception of alcohol consumption, thereby accepting the hypothesis (H_1). Hence, this simply translates that perception of students on alcohol consumption has an inverse and strong significant association with health risk associated with consumption of alcoholic drinks (t = -4.82; p<0.001). Also, since p<0.05, we have sufficient statistical proofs from our study's analysis that "frequency" of alcohol consumption and health risk associated with alcohol consumption was significantly associated. Therefore, we are accepting the alternative hypothesis (H_1), while the null hypothesis (H_0) is being rejected. Frequency of alcohol consumption and perception of students on alcohol consumption were found to be significantly associated with students' knowledge of health risk associated with alcohol consumption (f = 12.13; p<0.05). The results further revealed that students' knowledge on health implications associated with alcohol consumption contributed about 10% to amount of alcohol consumed and their perception of alcohol consumption.

6. DISCUSSION OF FINDINGS

The results of this study have established the relationship among the knowledge, perception of health risks associated and consumption of alcohol amongst students of selected public tertiary institutions in Kwara State, Northcentral Nigeria. This section of the study discusses the findings of the study in line with the broad objective.

Findings from the study on frequency of alcohol consumption showed that various types of alcoholic drinks were consumed by the respondents at varying rates. It is evident from the study that more than half of the respondents in University of Ilorin consumed at least a bottle of beer (50.6%), dry gin (55.1%), palm wine (66%), energy drinks (67.2%) and herbal drinks (57.1%) on weekly basis. The outcomes of the study also showed that that about three-quarters of the respondents from Federal Polytechnic, Offa consumed between 2 to 3 bottles of beer (74.2%), dry gin (75%), palm wine (74.2%), energy drinks (73.4%) and herbal drinks (72.7%) every months, while a quarter of the students from Kwara State of Education, Oro consumed between 2 to 3 bottles of dry gin (25%) and palm wine (25%) on weekly basis. Therefore, it is evident from the study that the frequency of alcohol consumption among respondents across the three public tertiary institutions was relatively high. Therefore, the findings from this study showed that the prevalence of consumption of alcohol among the students of the selected public tertiary institutions in Kwara State was high.

The results of the study on the extent of public tertiary institution students' knowledge of the health risks associated with the consumption of alcohol showed that significant number of the respondents were yet to come into agreement that people could get sick as a result of consumption of alcohol nor have they come to accept that memory loss could arise from alcohol consumption. Similarly, more than 60% of the respondents lacked the knowledge that alcohol consumption could lead to vision and hearing impairments, as well as to speech and coordination imbalance. However, majority of the respondents affirmed that alcohol consumption could lead to cardiac and liver related diseases. These findings are in line with [10, 19, 21, 24, 29] who affirmed in their studies that alcohol consumption among students come along with severe negative implications such as heart-related

infections, liver and kidney damage. Ndegwa, et al. [24] further argued that students' knowledge on the negative implications of consumption of alcohol had influence on frequency and quantity of alcohol consumed. Onongha [19] as well as Adeoye and Ayodele [29] discovered that knowledge of health implications of alcohol consumption to a large extent influence the type of alcoholic drinks students consume on regular basis.

According to the outcomes of the study on students' perception about alcohol consumption, consumption of alcohol was not seen as a waste of money among the respondents. Also, it was largely shared by the respondents that alcohol consumption had no negative effect on their appetite, while alcoholic drinks were perceived as stimulants that enhanced level of comprehension among students. Alcohol, when consumed moderately consumed, increases their libido, improves their level of self-esteem and makes their consumers more agile and active. Therefore, the results of the study on students' perception towards consumption of alcohol showed that consumption of alcoholic drinks comes with both negative and positive impacts. It was largely argued by the students that moderate consumption of alcohol is good for the body and comes with little or no negative health implications as ignorantly conceived. These findings are in line with Dumbili [37] who emphasized that students sometimes consumed alcohol with the assertion that it is required for a healthier growth in all humans. Similarly, the findings of this study are not absolutely different from Ndegwa, et al. [24] who stated that students 'assertion of alcohol consumption was most often from the angle of relaxation and getting on well with friends and life in general not bothering on the negative effects of alcohol on their health well-being and academics.

Agreeing to the outcomes of the study, measures taken by the respondents in reducing the amount of alcohol consumed varied from drinking lots of water to taking of drugs that could reduce the health implications that may arise from excessive and regular consumption of alcohol. Similarly, some of the respondents reported that they deliberately avoided heavy drinking of alcohol. They maintained that these measures are taken to reduce the amount of alcohol they consumed. These findings were in line with Audu [21] and Dumbili [37] who maintained that some students who consume alcohol know their limit, and often find a way of controlling or limiting their alcohol consumption so that it will not affect their academic performance or health. In a related study conducted by Ndegwa, et al. [24] among selected university students in Kenya, it was discovered that students who were moderate consumers of alcohol tried as much as possible to avoid circumstances that would entice them into consuming liquor more than required.

7. CONCLUSION

The extent of students' knowledge of health implications associated with alcohol consumption among students was explained by their perception of alcohol consumption, as well as the amount of alcohol consumed per time. Based on the findings of this study, it is concluded that students' socio-demographic characteristics, particularly, age, income, family type, gender and level of study influenced their perception towards alcohol consumption. Also, it is evident from this study that environmental factors, peer group pressures, level of self-esteem and family background influenced alcohol consumption among students. Also, it can be concluded that although the students had good knowledge of health risks associated with alcohol consumption, it was imperative that students were of the perception that they were not vulnerable to these health risks as far as alcohol was consumed in moderation. Hence, the study concluded that more awareness on the need to reduce alcohol consumption among undergraduates in public tertiary institution across the nation cannot be overemphasized.

8. RECOMMENDATION

Following the foregoing findings, the study recommends that:

i. Management and key stakeholders in tertiary institutions in the State should come up with laid down rules and regulations that will discourage the consumption of alcohol among students. In order to achieve this,

the counselling unit across schools should be made more friendly, proactive and diligent in the discharge of their duties.

ii. Based on the findings of this study, many of the students had good knowledge of health risks associated with alcohol consumption, yet they were not seeing anything wrong with it as long as alcohol was consumed moderately; therefore, there is a need for health education advocacy programmes for students with the primary goal of reducing alcohol consumption among students to the barest minimum.

iii. Finally, sales of alcoholic drinks should be banned within campuses and alcohol vendors should be discouraged from selling alcoholic drinks of any kind to students and minors irrespective of the locations. Alcohol vendors that violate this law should be punished as is statutory while student caught should be placed on suspension after being counselled in the school counselling unit.

8.1. Strengths and Weaknesses of the Study

The main limitation of this study was due to cross sectional data that was used which would not be able to demonstrate and explain the causal-effect relationship. Also, the sensitive nature of the study prompted respondents (undergraduates) to feel reluctant to give response and after a series of persuasion and close rapport, they were able to relate and provide information more than what was being required from them. Lastly, there is a need to conduct qualitative study with key administrators in the study area to establish the relationship between rules and regulation prohibiting alcoholism among students and the extent of the implementation of these laws.

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