

**ALCOHOL DEPENDENCE AND ILLICIT DRUG USE AMONG
UNDERGRADUATES IN IBADAN**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR
THE AWARD OF MASTER OF SCIENCE**

(BIOSTATISTICS)

**IN THE DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL
STATISTICS**

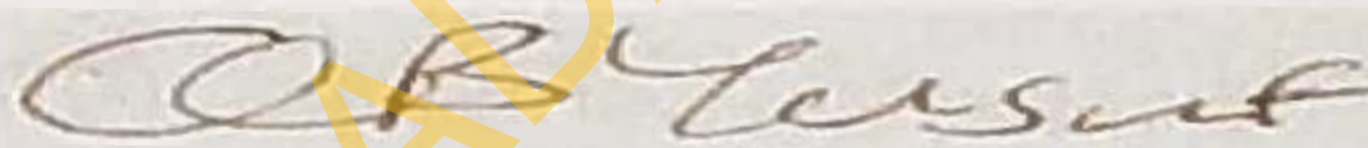
FACULTY OF PUBLIC HEALTH

Certification

I certify that **Miss Onyinyechukwu Onu Onwuka** carried out this research under guidance and supervision at department of Epidemiology and Medical Statistics, University of Ibadan, Nigeria for the Award of Degree of Masters of Science in Biostatistics

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Dedication

To a mother who has given me the precious gift of love

MUMMY, Edith Nwanyiugo Onwuka

Rest In Peace, Amen.

To all who contributed to the success of this research project.

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No one walks alone in the journey of life.

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List of Abbreviations

AUDIT- Alcohol Use Disorder Identification Test

GENACIS– Gender, Alcohol and Culture: an International Study

CIDI- Composite International Diagnostic Interview

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ABSTRACT

Background: Alcohol dependence and use of illicit drugs are global problems. They have become a problem among undergraduates in many countries in Africa. This study was designed to explore factors that could lead to alcohol dependence and illicit drug use among undergraduate students of University of Ibadan and The Polytechnic Ibadan.

Methods: A total of 2,395 students were interviewed in a cross sectional study conducted in 2007. Bivariate analysis was used to investigate associations between alcohol dependence, illicit drug use and explanatory variables. Multinomial logistic regression model was used to investigate the strength of the associations between alcohol dependence and explanatory variables significant in the bivariate analyses.

Results: The mean age of students was 22 ± 2.0 years. Most of the students were Christians (69.4%), lived on campus (54.8%) and were in their 200 level of education (41.2%). The prevalence of alcohol use by respondents was 24%. Though the age of onset of alcohol use between the two genders do not vary, a larger proportion of respondents (16.7%) started taking alcohol at age of 18 years. Similarly, there was a difference in the rate of alcohol consumption by gender, with a larger proportion reported to have moderately consumed alcohol (55.9%). The prevalence of illicit drug use by respondents was 6.9%. A higher proportion of males (80.5%) were involved in the use of illicit drugs compared to females (19.5%). There was no significant associations between illicit drug use and place of residence, peer group influence, marital status, religion, ethnicity, family drinking habits, level of education ($p > 0.05$).

Further more, 13% of the respondents were moderately dependent as compared to (4.9%) who were lowly dependent on alcohol. Whereas place of residence, ethnicity, family drinking habits had significant contribution to alcohol dependence. Respondents who lived on campus were 1.7 times less likely to have high alcohol dependence (OR = 0.594; 95% C.I = 0.347 - 1.018) ($p < 0.05$)

Conclusion: University students in many countries are at elevated risk for heavy drinking and use of illicit drugs with serious immediate health risks. There is a need to embark on a comprehensive alcohol and drug education campaign in Ibadan to make students more aware of the dangers inherent in their use.

CHAPTER ONE

INTRODUCTION

1.1 Background

Alcohol dependence is a chronic disease in which a person craves drinks that contain alcohol and is unable to control his or her drinking. A person with this disease also needs to drink greater amounts to get the same effect and has withdrawal symptoms after stopping alcohol use. Alcohol dependence affects physical and mental health, and can cause problems with family, friends, and work. Also called alcoholism. (National Cancer Institute)

Misuse and abuse of drugs by adolescent are global problems. In most industrialized countries the use of illegal psychoactive substances is a serious public health challenge, and usually begins during adolescence (Michaud et.al, 2006). Thus, in all countries it is a public health imperative to assess the population rates of illicit drug use among adolescents. The prevalence of health-risky behaviors associated with adolescent illicit drug use has attracted growing international recognition. Especially in southern Africa, unsafe sexual behaviors may have significantly untoward consequences, considering the high HIV prevalence estimates from the region (Ferrand et.al, 2007).

Several studies reported within the last decade have examined the drinking behaviour of adolescents and young adults. UK teenagers are characterized by high levels of intoxication and binge drinking (identified as more than five drinks consumed in a row), when compared with their European counterparts (Hibell et.al., 2001) account for more than 55000 deaths of young people in Europe (Rehm and Eschmann, 2002). Recent evidence suggests that these high levels are being maintained but, significantly, have not increased further (Miller and Plant, 2001).

Alcohol may be the world's oldest known drug. Fermented grain, fruit juice and honey have been used to make alcohol (ethyl alcohol or ethanol) for thousands of years. The production of products containing alcohol has become big business in today's society and the consumption and abuse of alcohol has become a major public health problem.

The effects of alcohol dependence range from a mild hang over to mass destruction, disease and deaths on a huge scale. Alcohol use in moderation has little or no ill effects either for the user or

those around them. But the misuse of what has become one of the world's most dangerous drugs takes a devastating toll on both the drinker and on society as a whole. Adults dependent on alcohol report high rates of illegal drug use and nonmedical use of prescription drugs, as compared with the general population. Seventy percent of those with alcohol dependence had never received treatment for that problem or other substance abuse (Hedden, 2010)

Most agree that the occasional alcoholic drink never hurt anyone. The real danger lies in binge drinking and the development of a tolerance to alcohol, which causes the drinker to consume greater quantities of booze in a bid to regain that original but elusive feeling of well being.

Alcohol abuse is arguably a major public health problem in Africa and has an especially powerful impact on youth (16-30 years) who constitute 30-40% of the population of various African countries (Parry et al.1999, 2004; Asuni et al, 1986; Odejide and Odejide, 1999). The authors noted that within the last three decades, adolescents and young adults have become the target audience for alcohol marketing.

It is estimated that alcohol is responsible for 1.8million deaths worldwide and in 2002 accounted for 4% of deaths and disability (Wilsnack et al, 2006). Adverse health outcomes from long-term chronic alcohol use may not cause death or disability until late in life, acute health consequences of alcohol use including intentional and unintentional injuries are far more common among younger people.

Survey and anecdotal data from countries around the globe suggest that a culture of sporadic heavy or "binge" drinking among young people may be spreading from the developed to the developing countries. Efforts to promote alcohol use globally have increased in both prevalence and sophistication in the past 30years (Edwards et al 1994). A survey carried out in Ibadan a city in South West Nigeria found the prevalence rate of alcohol use among adolescents to be 56% with equal proportion of males and females found to use alcohol (Odejide et al, 1987).

In Nigeria, psychoactive substance misuse especially alcohol has for many years been an issue of increasing health and social importance especially the critical adolescent period marked by several changes including the psychological phenomenon of experimentation. Furthermore, it has been suspected that the use of substances like cannabis, heroin, cocaine and to some extent alcohol may have to do with the spreading of secret cults among university students (Adelekan

et.al, 1983; Attah-Johnson, 1985). Studies carried out in the last decade in Nigeria have identified adolescents as a major group involved in the use of alcohol.

This study describes the dependence of alcohol use and illicit drug abuse among undergraduate students in Ibadan, South-West, Nigeria. The objective of the study was to estimate the prevalence of alcohol abuse and dependence among students attending University of Ibadan and The Polytechnic Ibadan and to determine demographic, drinking, individual and college level variables associated with alcohol dependence.

1.2 Problem statement

Alcohol, illicit drug use, and other lifestyle variables, as well as stress, anxiety and personality have reported high percentages in the world. This has become a problem among undergraduates in many countries in Africa. In Nigeria it is a widespread and probably expanding epidemic among undergraduate students. There are only a few published studies focusing on alcohol dependence and illicit drug use among undergraduate students (Ref), none of which has been carried out in the area covered by the present investigation. Psychoactive substance misuse especially alcohol has for many years been an issue of increasing health and social importance therefore effectiveness of current health education on alcohol and illicit drugs is questionable (Dorothy et.al, 2000)

1.3 Main Objective

This study seeks to determine factors that could lead to alcohol dependence and illicit drug abuse among undergraduate students in Ibadan

1.4 Specific objectives

- To determine the age of onset of alcohol use
- To determine the prevalence of alcohol use by gender
- To determine the prevalence of illicit drug abuse by gender
- To determine the factors that bring about alcohol dependence and illicit drug abuse

1.5 Justification of the study

It will provide contemporary documentation of alcohol dependence in Ibadan and Nigeria as a whole and Knowledge on alcohol dependence will help educate the public on the dangers of alcohol abuse i.e. injuries, diseases, deaths. The result of this study will assist college health professionals and administrators in designing early identification and intervention programs for those students who are at highest risk due to illicit drug use and alcohol dependence. A majority of the studies from this region focus on primary and secondary schools, and little information is available from college and university.

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CHAPTER TWO

LITERATURE REVIEW

Alcohol consumption has occurred for thousands of years. Drinking alcoholic beverages is a common feature of social gathering in many parts of the World. Alcohol beverage consumption patterns vary considerably among different countries and even among different ethnic groups within one country. These variations in drinking patterns include for example, the types of beverages consumed preferentially, occasions on which consumptions typically occurs, drinking levels that are considered normal and population sub groups for whom drinking is considered acceptable (WHO World Health Report. Management of substance abuse: Alcohol, 2009)

Globally, alcohol consumption has increased in recent decades, with most of that increase in developing countries. Past study showed that worldwide, five per cent of all deaths of people between the ages of 5 and 29 in 1990 were attributable to alcohol use. The Global Burden of Disease study reported in 1990, that 3.5 per cent of all disability – adjusted life years was caused by alcohol more than tobacco or illegal drugs. While adverse health outcomes from long term chronic alcohol use may not cause or disability until late in life, acute health consequences of alcohol use, including intentional and unintentional injuries, are far more common among younger people (Murray & Lopez 1997).

In its rudimentary forms, alcohol has, for a long time, formed an intricate part of African social life. Most of the alcohol consumed was produced from cereal grains such as maize, millet and guinea corn. As early as 4241 B.C., beer made from barley was consumed in Egypt as a social diversion (Obot, 1993). Despite this long history with alcohol, research on alcohol use in Africa is a relatively recent phenomenon. Although the first epidemiological data on the use of illicit drugs, particularly marijuana (Cannabis), have been available for slightly more than 40 years, it has only been in the last 2 decades that research on alcohol consumption and related problems has been conducted (Obot, 2000) in Nigeria.

2.1 History of Alcohol in Nigeria:

Alcohol use in Nigeria dates far back in history. Alcoholic beverages in the pre-colonial period consisted mainly of palm wine (or distillate of palm wine - e.g., Oogoro) and fermented cereals

such as guinea corn. Elaborate alcohol consumption by the priests and pouring of libations formed essential parts of many religious ceremonies and rituals. In the main, alcohol played a socially harmonizing role, as has been shown among the Kofyar people near Jos (Netting, 1964). Convivial drinking during important social events was characteristic of many traditional Nigerian communities (Odejide and Olatawura, 1977).

The pattern and extent of drinking changed radically as trading contacts were made with the Europeans, especially during the slave trade. Lynn Pan (1975) in her monograph gave a good description of how these economic contacts with the European colonialists led to an upsurge in alcohol consumption in Africa. According to her, "alcohol was part and parcel of the commerce which for centuries constituted the basic tie between Europe and Africa." It was an article of the barter system through which European goods were exchanged for African slaves.

In the Ibadan region of Nigeria, the most commonly consumed alcoholic beverage are palm-wine, which is produced from the sap of the palm tree and has an alcoholic content of 3 to 6 per cent and beer. Burukutu which is fermented from guinea corn and also ranges in alcohol content 3 to 6 per cent is another typical alcoholic beverage consumed in the region. Throughout Nigeria, native gin distilled from palm-wine is also popular (Oshodin 1995) as is beer.

Alcoholic beverages are actually considered a type of food in Nigeria and as in many African countries.

Recent epidemiological studies in Nigeria have shown a change in the trend of alcohol use in the past few decades. Prior to the 1970s, alcohol was commonly used by adult males, and alcohol-related health problems requiring hospitalization were found predominantly in males (Asuni, 1975; Odejide, 1978). However, its use cuts across ethnic, social and religious barriers (Odejide, 1978). Asuni (1975) reviewed cases admitted to the Neuro-Psychiatric Hospital, Abeokuta, over a period of 10 years. He found the majority of the subjects to be middle-aged adults. In a similar 10-year retrospective study of the admission pattern in the psychiatric ward of the University College Hospital, Ibadan, Odejide (1978) found the 42 cases identified to be middle-aged adults. Also, in his 1979 study of alcohol use among a subgroup of 340 literate Nigerians, Odejide found moderate drinking patterns to be more prevalent among middle-aged males, irrespective of their occupation. Professional women, however, were found to use more alcohol than their non-professional counterparts.

2.2 Types of Traditional Alcoholic Beverages in Nigeria:

Burukutu: Is a popular alcoholic beverage of vinegar like flavor prepared from sorghum grains and fermented guinea corn and consumed in the northern guinea savannah region of Nigeria (Haard NF et al, 1999). It's also consumed in the Ibadan region and ranges in alcohol content from 3-6% (Bennette LA et al, 1998). Burukutu is the most popular alcoholic beverage in the rural areas of northern Nigerian and in poor urban neighbourhoods because it's thick and heavy. The producers of burukutu are mostly women (Obot IS, 2000).

Palmwine: Is to southern Nigeria what burukutu is to northerners. It's the whitish sap collected in vessels attached to the base of the tree from where some leaves have been removed. Fresh wine from these sources is sweet and contains little alcohol, but with fermentation, the alcohol content increases in time. Unbottled palm wine has a lower alcohol content around 3% than bottled palmwine (around 4%)(Stanley PC, Odejide AO, 2002). In general, palm-wine, which has an alcohol content of 3-6%, is also widely consumed in Ibadan region of Nigeria (Bennette LA et al, 1998).

Pito: Is the traditional beverage of the Binis in the mid-western part of Nigeria. It's now very popularly consumed throughout Nigeria owing to its low price. Pito is a dark brown liquid prepared from cereal grain (maize, sorghum or a combination of both) and varies in taste, from sweet to bitter. It has an alcohol content of 3%.

Emu: This is produced from sugary palm saps. The most frequently tapped palms are raffia palms and the oil palm. It has an alcoholic content of around 5% (Toddy, 2004)

Ogogore: This is also known as kinkana & apetesi. It's a gin-like drink distilled from oil or raffia palm wine. The end point is a clear liquid with alcohol content often higher than 40% (Obot IS, 2000).

2.3 Alcohol dependence:

Heavy alcohol use may be associated with alcohol dependence. According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), alcohol dependence is characterized by increased tolerance, withdrawal symptoms when alcohol is not used, unsuccessful efforts to cut down on alcohol use, and interference with everyday life. Therefore alcohol dependence is a disease that is characterized by the sufferer having a pattern of drinking excessively despite the negative effects of alcohol on the individual's work, medical, legal, educational, and/or social life. Alcohol is involved in nearly half of all violent deaths involving teens.

Alcoholism is a destructive pattern of alcohol use that includes a number of symptoms, including tolerance to or withdrawal from the substance, using more alcohol and/or for a longer time than planned, and trouble reducing its use. According to (Adelekan et.al, 1992), Majority of the 'current users' use the substances on an occasional basis except for cigarettes where more than half reported weekly or daily use. Males were significantly more of 'current' users of cigarettes and alcohol while females tend to use stimulants more. The use of most of the substances started in primary school. The need for a comprehensive demand-reduction programme in Nigeria based on this and other local findings was advocated. Continuous monitoring, particularly of hard drug use, appears imperative. Likewise in U.S recent data indicate that 24% of males and 13% of female college students in the United States meet clinical criteria for an alcohol use disorder (Slutske, 2005)

2.4 Illicit drug use:

Alcohol consumption has remained the same during the past several years but surveys carried about college students around the world suggest that illicit drug use has risen during a similar time period. Substance use among college and university students remains an important area of research due to the implications of early substance dependence on the future of the youth. Prior studies from various settings indicate relatively high rates of alcohol and other substance use among high school students and those in higher educational institutions (Baldwin DC Jr, Hughes PH, et al, 1991, 265:2074-2078; East Afr Med J 1996, 73:339.). Among the few studies from universities and colleges in Kenya, Odek-Ogunde et al reported high rates of substance use

among students at a Kenyan private university, with rates as high as 84% for alcohol use and 54.7% for tobacco use (Odek-Ogunde M, Pande-Leak D: East Afr Med J 1999, 76:301-306.)

Most of these studies still find high rates of substance use among school-children, suggesting that the rates would continue to rise among students in institutions of higher learning. Interpersonal violence and illicit drug use are major public health challenges that are strongly linked. Involvement in drug use can increase the risks of being both a victim and/or perpetrator of violence, while experiencing violence can increase the risks of initiating illicit drug use. The impacts of drug-related interpersonal violence can be substantial, damaging individuals' health and the cohesion and development of communities, whilst also shifting resources from other priorities, particularly within health and criminal justice services. Globally, interpersonal violence accounts for around half a million deaths per year (Krug EG et al. 2002); for every death there are many more victims affected by violence physically, psychologically, emotionally and financially. Illicit drugs are used by millions of individuals throughout the world, and both their effects and the nature of illicit drug markets place major burdens on health and society (Home Office. Drugs: The 2008 drug strategy. London, Home Office, 2008; Annual Report 2008, UNODC, 2008; Cabinet Office. SU drugs project. Phase 1 report 2003).

As individuals pass through adolescence, they undergo many physical, cognitive, social, and emotional changes. Most learn to adapt to these changes in healthy ways. For others, turmoil, conflict, and deviant behavior lead to upheaval and disorganization as they attempt to cope. Drug use as a behavior may serve many functions in this attempt to cope, and it can have many consequences. A single episode of drug use does not necessarily lead to further use but several episodes may lead to ever increasing use, with abuse and dependence as the result. (Donovan, J. E., & Jessor, R. (1983))

Uses of a drug, age of first use, and reasons for use are all factors related to continued drug use. Early adolescents who try one type of drug may venture on to sample a diverse number of substances. This can lead to regular use of certain drugs (e.g daily cigarette or marijuana smoking); it may become part of a pattern of multiple drug use (e.g., weekend drinking and smoking or daily uppers and downers) that by late adolescence becomes dependence or abuse. Factors related to initiation and progression into other drug phases, regular drug use, abuse, and

dependency into the use of multiple drugs are important to understand in order to develop appropriate prevention programs aimed at reducing all drug use whether legal or illicit.

2.5 Reasons for drug use:

An adolescent who tries a particular type of drug for both pharmacological and psychological reasons, is more likely to use that substance again if he or she enjoys the drug's effects. However, if unpleasant experiences are associated with the use, trying it again is less likely.

Often the drug amount will need to be increased in order to obtain an effect because the body becomes accustomed to the effect of a drug. This phenomenon is known as tolerance, and once tolerance to a drug develops, the level of drug use may escalate into larger and larger doses. Continued use of drugs may also occur because of unpleasant withdrawal symptoms that may appear as the drug (e.g., heroin, nicotine, caffeine) begins to wear off. To avoid these withdrawal symptoms, a user may feel compelled to establish a regular pattern of use, possibly resulting in physical dependence.

The way a drug is used is also a factor in developing tolerance and physical dependence. For example, an adolescent who sniffs cocaine may find that the amount he or she has to inhale to get the desired effects becomes enormous. Because of this, the user may switch to injecting the cocaine instead of inhaling it. This new route of administration exposes the user to a more potent form of the drug as well as to increased medical complications.

Other reasons that adolescents continue using a particular drug may be socially and environmentally driven. Teenagers looking for peer acceptance or wanting to appear "cool" or mature might decide to use drugs. For example, although the use of tobacco and alcohol is illegal for adolescents, it is both legal and socially acceptable for adults. Advertising, the media, and role models portray drinking and smoking as desirable. Associating and socializing with peers who are using drugs provides an opportunity for access to drugs that can encourage experimentation and ongoing use.

Researchers have investigated the influence of parents and the family environment on children's alcohol and drug use, dysfunctional patterns of coping, and delinquent activity. In one study, a large group of New Jersey adolescents was interviewed by phone at two different times, three

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Researchers have investigated the influence of parents and the family environment on children's alcohol and drug use, dysfunctional patterns of coping, and delinquent activity. In one study, a large group of New Jersey adolescents was interviewed by phone at two different times, three

years apart. Between 1979 and 1981, 1,380 subjects aged 12, 15, and 18 were interviewed. Three years later, 95 percent of them (1,308 subjects) were interviewed again. The interviews included topics of family harmony and cohesion, parenting styles, and the attitudes and behaviors of parents. The results showed that the alcohol consumption of the younger children was influenced by the alcohol use and attitudes of the parent of the same gender as the child. Older adolescents, though, were most strongly affected by the father's alcohol use. Parental hostility and lack of warmth toward the children was associated with use of drugs and alcohol among adolescents (Johnson & Pandina, 1996).

2.6 Drug-use sequence:

The use of one drug is often related to the subsequent use of another. Typically, drug use begins with alcohol and cigarettes, which are followed by marijuana and other illicit drugs. This typical sequence of drug use was established in the 1970s (Kandel & Faust, 1975) and was found to continue into the 1990s, in different populations and in different ethnic and cultural groups. Problem drinking typically fits into the pattern between ongoing marijuana use and the use of other illicit drugs (Donovan & Jessor 1983).

Cocaine use tends to follow marijuana use, with crack-cocaine use occurring after cocaine use (Kandel & Yamaguchi, 1993). For example, it is likely that someone who smokes crack has already tried tobacco, alcohol, marijuana, and cocaine. Many adolescents who use drugs in one category, however, do not necessarily progress to drug use in a "higher" category; many stop before becoming involved in further use or habitual use.

An important factor in the progression through the sequence of drug use is age of onset or initiation. The use of alcohol and cigarettes typically but not always begins at an earlier age than the use of illicit drugs. Adolescents who progress to using illicit drugs such as crack generally begin smoking and drinking earlier than those who do not. Early drug use (before age fifteen) is highly correlated with the development of drug and alcohol abuse in adulthood (Robins & Przybeck, 1985).

Studies of adult populations provide additional support for a connection between regular adolescent drug use and later, further drug use. For example, illicit drug use during adolescence and early adulthood has been found to occur more often in adults who have used psychotherapeutic medicines (e.g., tranquilizers, sedatives) (Trinkoff, Anthony, & Muñoz, 1990). Studies of people going to drug-treatment centers often demonstrate that these people are not only entering treatment for use of substances such as cocaine or heroin but that they are also addicted to caffeine, tobacco, and/or alcohol, the very substances they first started using.

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CHAPTER THREE

METHODOLOGY

3.1 Study Area

Ibadan is located in south-western Nigeria. It is the capital of Oyo State, and is reputed to be the largest indigenous city in Africa, south of the Sahara. Ibadan had been the centre of administration of the old Western Region, Nigeria since the days of the British colonial rule. It is situated 128km inland north-east of Lagos and 530 km south-west of Abuja, the federal capital, and is a prominent transit point between the coastal region and the areas to the north. Its population is estimated to be about 3,800,000 according to 2006 estimates. The principal inhabitants of the city are the Yorubas. The University of Ibadan is the oldest Nigerian University, and is located five miles (8 kilometres) from the centre of the major city of Ibadan in Western Nigeria. It has over 12,000 students.

3.2 Study Design

This was a cross-sectional study carried out in 2007 in two major higher institutions located in Ibadan namely; University of Ibadan and The Polytechnic, Ibadan.

3.3 Study Sample

The minimum sample size was determined to be 1035 using an alcohol prevalence of 56% at 95% confidence interval and absolute difference of 3%, which was doubled to 2070 to improve precision.

3.4 Sampling technique

Selection was done based on faculties and departments. By use of balloting method, fifty percent of faculties were randomly selected in each institution and also fifty percent of departments within each faculty were selected. All these were proportionally allocated to the selected departments depending on their student population.

3.5 Data collection method

This study utilized a secondary data collected in 2007 by use of a structured questionnaire that was designed to obtain information on respondent's age, religion, ethnicity, level and course of study and on whether they lived on or off campus. The questionnaire was made up of two parts. First part contained socio-demographic data and was used to screen for the presence of alcohol use and elicit information on their attitude and family history of alcohol use. This screening was done using the Alcohol Use Disorders Identification Test (AUDIT) and it was administered to all respondents. The second part of the questionnaire was administered only to respondents who reported using alcohol in the preceding 12 months and were then assessed using an adapted version of the questionnaire used in GENACIS (Gender, Alcohol and Culture: an International Study) and the CIDI (Composite International Diagnostic Interview). The GENACIS questionnaire was designed to enhance the understanding of alcohol problems and provide a basis for effective interventions. The alcohol use section of the CIDI was used to establish a diagnosis of harmful use or alcohol dependence.

3.6 Statistical analysis

Descriptive statistics such as means and standard deviations were used to summarize quantitative variables while qualitative variables were summarized by percentages. Alcohol dependence was computed from the 10 AUDIT test questions while illicit drugs were computed from nine questions asked in the data set.

The Chi-square test was used to investigate associations between categorical variables. Variables that were significantly associated with the outcome variables were used in the binary and multinomial logistic regression model to investigate if differences in the outcome variables are attributed to contextual or individual level characteristics of the subjects. All the analysis was done using SPSS version 15 and level of significance was taken to be 5%. All tests were two sided.

3.6.1 Multinomial logistic regression

Multinomial logistic regression is used to model nominal outcome variables, in which the log odds of the outcomes are modeled as a linear combination of the predictor variables.

The multinomial logistic regression model used is generally effective where the dependent variable is composed of a polytomous category having multiple choices. The basic concept was generalized from binary logistic regression (Aldrich & Nelson, 1984; Hosmer & Lemeshow 2000). In a multinomial logistic regression model, the estimates for the parameter can be identified compared to a baseline category (Long, 1997). In this study, having no willingness to substitute was specified as the baseline category.

Multinomial logistic regression is often considered an attractive analysis because; it does not assume normality, linearity, or homoscedasticity. Multinomial logistic regression does have assumptions, such as the assumption of independence among the dependent variable choices. This assumption states that the choice of or membership in one category is not related to the choice or membership of another category (i.e., the dependent variable). The multinomial logistic regression model used in this study estimated the effect of socio-demographic variables on the probability of identifying the extent of alcohol dependence among undergraduate students.

3.6.2 The Multinomial Logit model

Multinomial logistic regression is employed when the response variable is polytomous, i.e taking $r > 2$ categories. Where r = number of responses. The multinomial logistic regression model used in this study estimated the effect of socio-demographic variables on the probability of identifying the extent of alcohol dependence among undergraduate students.

In fitting the multinomial logit model, the outcome variables; alcohol dependence (1 = low dependence; 2 = moderate dependence; 3 = high dependence).

For a dependent variable with K categories, the existence of K unobserved continuous variables, Z_1, \dots, Z_k , are considered, each of which can be thought of as the "propensity toward" a category. Here, Z_k represents a student's propensity toward selecting the K^{th} level of dependence, with larger values of Z_k corresponding to greater probabilities of choosing that level (assuming all other Z 's remain the same).

Mathematically, the relationship between the Z 's and the probability of a particular outcome is described in this formula.

$$\Pi_{ik} = \frac{e^{Z_{ik}}}{e^{Z_{i1}} + e^{Z_{i2}} + \dots + e^{Z_{iK}}}$$

Where

Π_{ik} is the probability that i^{th} case falls in category k

Z_{ik} is the value of the k^{th} unobserved continuous variable for the i^{th} case

Z_k is also assumed to be linearly related to the predictors.

$$Z_{ik} = b_{k0} + b_{k1}x_{i1} + b_{k2}x_{i2} + \dots + b_{kJ}x_{iJ}$$

Where

x_{ij} is the j^{th} predictor for the i^{th}

b_{kj} is the j^{th} coefficient for the k^{th} unobserved variable

J is the number of predictors.

If Z_k were observable, linear regression to each Z_k would simply be fit, and be done. However, since Z_k is unobserved, the predictors to the probability of interest must be related by substituting for Z_k .

$$\Pi_i = \frac{e^{b_{k0} + b_{k1}x_{i1} + \dots + b_{kJ}x_{iJ}}}{e^{b_{10} + b_{11}x_{i1} + \dots + b_{1J}x_{iJ}} + \dots + e^{b_{K0} + b_{K1}x_{i1} + \dots + b_{KJ}x_{iJ}}}$$

As it stands, if a constant is added to each Z , then the outcome probability is unchanged. This is the problem of non-identifiability. To solve this problem, Z_k is (arbitrarily) set to 0. The K^{th} category is called the reference category or "standard" category to which others would be

compared, because all parameters in the model are interpreted in reference to it (for convenience sake).

$$\begin{aligned}
 \Pi_{ik} \text{ (with constants added to } z' \text{ s)} &= \frac{e^{z_{ik}+c}}{e^{z_{i1}+c} + e^{z_{i2}+c} + \dots + e^{z_{ik}+c}} \\
 &= \frac{e^{z_{ik}} e^c}{e^{z_{i1}} e^c + e^{z_{i2}} e^c + \dots + e^{z_{ik}} e^c} \\
 &= \frac{e^{z_{ik}}}{e^{z_{i1}} + e^{z_{i2}} + \dots + e^{z_{ik}}} \\
 &= \Pi_{ik}
 \end{aligned}$$

The coefficients are estimated through an iterative maximum likelihood method.

Moderate dependence (1) as the reference category, a model for low dependence relative to moderate dependence was fit.

Another model for high dependence relative to moderate dependence was also fit.

Since the parameter estimates are relative to the referent group, the standard interpretation of the multinomial logit is that for a unit change in the predictor variable, the logit of outcome m relative to the referent group is expected to change by its respective parameter estimate (which is in log-odds units) given the variables in the model are held constant.

3.7 Variables definition

3.7.1 Outcome variable

The dependent variables in this study are alcohol dependence and illicit drugs. For the purpose of this study, alcohol dependence and illicit drugs were defined as follows;

Alcohol Dependence:

This variable was defined using the 10 AUDIT questions which had set of responses to choose from and each response had scores. Using the SPSS, a new variable was computed with the variable name as Alcohol dependence and using the total score, three categories were got.

computed with the variable name as Alcohol dependence and using the total score, three categories were got.

Alcohol dependence was grouped into three categories:

- i. Low dependence: These are students who had a total score of 1
- ii. Moderate dependence: These are students who had a total score of 2-7
- iii. High dependence: These are students who had a total score of 8 and above.

Illicit Drugs:

This variable was measured using some set of questions asked in the data set. Such as

- i. Have you ever used marijuana?
- ii. Have you ever used heroine, Demerol, morphine?
- iii. Have you ever used cocaine?
- iv. Have you ever used hallucinogens?
- v. Have you ever used sedatives?
- vi. Have you ever used tobacco?
- vii. Have you ever used solvents?
- viii. Have you ever used paw-paw leaf ?

All the responses to the question was either yes or no. This was recoded into new variables giving 0 to No use of illicit drug and 1 to use of illicit drug. Using SPSS and the 8 questions above, a new variable was computed with the target name as illicit drug. For the purpose of this study, illicit drug was categorized into two namely,

- i. No implies =0 i.e these are students who never took any drug
- ii. Yes implies ≥ 1 i.e these are students who took at least one drug.

3.7.2 Explanatory variable

The independent variables used in this study were marital status, religion, educational level, ethnicity, current place of residence, peer group influence, family drinking habits.

CHAPTER FOUR

RESULTS

4.1 Socio-Demographic Characteristics

In a population of two thousand three hundred and ninety five students interviewed, 1698(70%) were twenty five years and below comprising of larger male proportion 883(52%) compared to females 815(48%) with sex ratio as 0.92: 1.

Table 1 shows the general socio-demographic characteristics of the sample by gender. The mean age of students was 22.2 ± 2.0 years (Female 21.9 ± 2.0 years; male 22.5 ± 1.9 years), ($p=0.139$) Most of the students were Christians (69.4%) with females having the larger proportion (73.3%). Also, most respondents were in their 200level of education (41.2%) with equal distribution between genders. In terms of place of residence, majority lived on campus (54.8%) with females having larger percentage (56.3%) and also the Yoruba ethnicity had a larger proportion (77.9%) as against the Hausa ethnicity having the lowest proportion (1.7%). Table 1.

Table 1: Socio-demographic characteristics of the sample by gender

| Characteristics | Gender | | Total N(%) | p value |
|--------------------------|-------------------|-------------------|--------------------|---------|
| | Male N(%) | Female N(%) | | |
| Age(yrs) mean(SD) | 22.2(2.0) | 21.9(2.0) | 21.5(2.1) | 0.139 |
| Religion | | | | |
| Christianity | 565(65.7) | 588(73.3) | 1153(69.4) | 0.003 |
| Islam | 281(32.7) | 202(25.1) | 483(29.0) | |
| Others | 14(1.7) | 12(1.5) | 26(1.6) | |
| Total | 860(100.0) | 802(100.0) | 1662(100.0) | |
| Educational Level | | | | |
| 100 | 37(4.2) | 49(6.1) | 86(5.1) | 0.150 |
| 200 | 361(41.3) | 333(41.2) | 695(41.2) | |
| 300 | 211(24.1) | 216(26.7) | 427(25.3) | |
| 400 | 235(26.9) | 185(22.9) | 420(25.0) | |
| 500 | 22(2.5) | 21(2.6) | 43(2.6) | |
| 600 | 9(1) | 4(0.5) | 13(0.8) | |
| Total | 875(100.0) | 808(100.0) | 1683(100.0) | |
| Marital status | | | | |
| Single | 857(97.5) | 765(94.2) | 1622(95.9) | 0.003 |
| Married | 20(2.3) | 42(5.2) | 62(3.6) | |
| Divorced or Separated | 2(0.2) | 5(0.6) | 7(0.5) | |
| Total | 879(100.0) | 812(100.0) | 1691(100.0) | |

| | | | | |
|------------------------------|-------------------|-------------------|--------------------|-------|
| Place of residence | | | | |
| On campus | 462(53.7) | 444(56.3) | 906(54.8) | 0.286 |
| Off campus | 399(46.3) | 345(43.7) | 744(45.2) | |
| Total | 861(100.0) | 789(100.0) | 1650(100.0) | |
| Ethnicity | | | | |
| Yoruba | 695(78.8) | 612(75.9) | 1307(77.9) | |
| Igbo | 103(11.8) | 110(13.6) | 213(12.7) | 0.218 |
| Hausa | 15(1.7) | 13(1.6) | 28(1.7) | |
| Others | 58(6.7) | 71(8.8) | 129(7.7) | |
| Total | 871(100.0) | 806(100.0) | 1677(100.0) | |
| Peer Group Influence | | | | |
| Home | 102(36.4) | 57(47.1) | 159(39.7) | |
| School | 41(14.6) | 26(21.5) | 67(16.7) | |
| Bar, Pub or Restaurant | 110(39.3) | 28(23.1) | 138(34.4) | 0.010 |
| Other Place | 27(9.6) | 10(8.3) | 37(9.2) | |
| Total | 280(100.0) | 121(100.0) | 401(100.0) | |
| Family Drinking Habit | | | | |
| Parents | 220(26.3) | 192(25.2) | 412(25.8) | |
| Siblings | 159(19) | 125(16.4) | 284(17.8) | 0.258 |
| None | 456(54.6) | 444(58.3) | 900(56.4) | |
| Total | 835(100.0) | 761(100.0) | 1596(100.0) | |

4.2 Distribution of age of onset of alcohol use

As shown in table 2, the age of onset of alcohol use between the two genders did not differ significantly. A larger proportion of respondents (16.7%) started taking alcohol at age of 18 years, Male (16%) and female (18.4%) respectively. Most male respondents tasted alcohol before age 24 compared to female (3.2%) respondents. The mean age of onset of alcohol use for males is 16.4 ± 3.9 and 16.7 ± 4.2 for females ($p=0.451$).

Table 2: Age of onset of alcohol use

| Age (Years) | Male n(%) | Female n(%) | Total N(%) |
|-------------|-----------|-------------|------------|
| ≤10 | 27(9.6) | 11(8.8) | 38(9.3) |
| 11 | 4(1.4) | 1(0.8) | 5(1.2) |
| 12 | 8(2.8) | 5(4) | 13(3.2) |
| 13 | 10(3.5) | 7(5.6) | 17(4.2) |
| 14 | 21(7.4) | 8(6.4) | 29(7.1) |
| 15 | 27(9.6) | 9(7.2) | 36(8.8) |
| 16 | 28(9.9) | 7(5.6) | 35(8.6) |
| 17 | 27(9.6) | 12(9.6) | 39(9.6) |
| 18 | 45(16.0) | 23(18.4) | 68(16.7) |
| 19 | 22(7.8) | 7(5.6) | 29(7.1) |
| 20 | 36(12.8) | 20(16) | 56(13.8) |
| 21 | 11(3.9) | 5(4) | 16(3.9) |
| 22 | 13(4.6) | 2(1.6) | 15(3.7) |
| 23 | 3(1.1) | 4(3.2) | 7(1.7) |
| 24 | 0 | 4(3.2) | 4(1.0) |

4.3 Prevalence of alcohol use

The prevalence of alcohol use by the respondents was 24%.

A higher proportion of males (32.4%) were involved in the use of alcohol compared to females (15.0%) ($\chi^2=70.234$, $p<0.05$) (Table 3)

Table 3: Prevalence of alcohol use by gender

| Gender | Alcohol Use | | |
|--------------|------------------|-------------------|--------------------|
| | Yes N(%) | No N(%) | Total N(%) |
| Male | 286(32.4) | 597(67.6) | 883(100.0) |
| Female | 122(15.0) | 692(85.0) | 814(100.0) |
| Total | 408(24.0) | 1289(76.0) | 1697(100.0) |

$$\chi^2 = 70.234 \text{ df}=1, p<=0.0001$$

4.4 Distribution of alcohol consumption by gender

Overall, a larger proportion of respondents reported a moderate consumption of alcohol (55.9%)

Male respondents moderately consumed more alcohol compared to their female counterparts (male: 57.2%, female: 53%), $p<0.0001$. (Table 4)

Table 4: Level of Alcohol consumption by gender

| Level of alcohol consumption | Gender | | Total |
|------------------------------|-----------------|-----------------|-----------------|
| | Male n(%) | Female n(%) | |
| Low | 45(16.2) | 38(32.5) | 83(21) |
| Moderate | 159(57.2) | 62(53) | 221(55.9) |
| High | 74(26.6) | 17(14.5) | 91(23) |
| Total | 278(100) | 117(100) | 395(100) |

$$\chi^2 = 15.88 \text{ df}=2, p<=0.0001$$

4.5 Illicit drug Use

The prevalence of illicit drug use was 6.9%.

A higher proportion of male (80.5%) were involved in the use of illicit drugs compared to female (19.5%) ($\chi^2=9.462$, $p<0.05$) (Table 5)

Table 5: Prevalence of illicit drug use by gender

| Gender | Illicit drug Use | | |
|--------------|-------------------|-------------------|-------------------|
| | Yes N(%) | No N(%) | Total N(%) |
| Male | 95(80.5) | 194(65.1) | 289(69.5) |
| Female | 23(19.5) | 104(34.9) | 127(30.5) |
| Total | 118(100.0) | 298(100.0) | 416(100.0) |

$\chi^2 = 9.462$ $df=1$, $p=0.002$

4.6 Distribution of illicit drug use by variables

Table 6 shows the factors that could affect the use of illicit drug among respondents. Of the 111 respondents that reported use of illicit drugs, 59(53.2%) lived on campus while 52(46.8%) lived off campus. ($p>0.05$). Similarly, of the 117 respondents who reported to use illicit drugs, 113(96.6%) were single while 1(0.9%) were divorced ($p>0.05$). (Table 6)

Table 6: Illicit drug use by selected variables

| Variables | Illicit drugs | | Total N(%) | χ^2 | p-value |
|------------------------------------|-------------------|-------------------|-------------------|----------|---------|
| | Yes N(%) | No N(%) | | | |
| <u>Place of residence</u> | | | | | |
| On-campus | 59(53.2) | 144(49.7) | 203(50.6) | 0.393 | 0.531 |
| Off-campus | 52(46.8) | 146(50.3) | 198(49.4) | | |
| Total | 111(100.0) | 290(100.0) | 401(100.0) | | |
| <u>Peer group influence</u> | | | | | |
| At home | 46(40.4) | 109(39.1) | 155(39.4) | 2.949 | 0.400 |
| At school | 14(12.3) | 52(18.6) | 66(16.8) | | |
| Bar, pub or restaurant | 41(36.0) | 95(34.1) | 136(34.6) | | |
| Some other place | 13(11.4) | 23(8.2) | 36(9.2) | | |
| Total | 114(100.0) | 279(100.0) | 393(100.0) | | |
| <u>Marital Status</u> | | | | | |
| Single | 113(96.6) | 282(95.3) | 395(95.6) | 0.776 | 0.855 |
| Married | 3(2.6) | 11(3.7) | 14(3.4) | | |
| Divorced | 1(0.9) | 2(0.7) | 3(0.7) | | |
| Separated | 0(0.0) | 1(0.3) | 1(0.2) | | |
| Total | 117(100.0) | 296(100.0) | 413(100.0) | | |
| <u>Religion</u> | | | | | |
| Christianity | 79(68.1) | 219(75.8) | 298(73.6) | 2.527 | 0.283 |
| Islam | 33(28.4) | 63(21.8) | 96(23.7) | | |
| Others | 4(3.4) | 7(2.4) | 11(2.7) | | |
| Total | 116(100.0) | 289(100.0) | 405(100.0) | | |
| <u>Ethnicity</u> | | | | | |
| Yoruba | 78(68.4) | 209(71.1) | 287(70.3) | 7.109 | 0.069 |
| Igbo | 24(21.1) | 47(16.0) | 71(17.4) | | |
| Hausa | 5(4.4) | 4(1.4) | 9(2.2) | | |
| Others | 7(6.1) | 34(11.6) | 41(10.0) | | |
| | | | | | |

| | | | | | |
|--------------------------------------|-------------------|-------------------|-------------------|-------|-------|
| Total | 114(100.0) | 294(100.0) | 408(100.0) | | |
| <u>Family drinking habits</u> | | | | | |
| Parents | 52(45.2) | 109(36.7) | 161(39.1) | 4.262 | 0.119 |
| Siblings | 32(27.8) | 77(25.9) | 109(26.5) | | |
| None | 31(27.0) | 111(37.4) | 142(34.5) | | |
| Total | 115(100.0) | 297(100.0) | 412(100.0) | | |
| <u>Level of Education</u> | | | | | |
| 100 | 3(2.6) | 10(3.4) | 13(3.2) | 2.978 | 0.703 |
| 200 | 45(39.1) | 130(43.9) | 175(42.6) | | |
| 300 | 27(23.5) | 69(23.3) | 96(23.4) | | |
| 400 | 38(33.0) | 77(26.0) | 115(28.0) | | |
| 500 | 2(1.7) | 9(3.0) | 11(2.7) | | |
| 600 | 0(0.0) | 1(0.3) | 1(0.2) | | |
| Total | 115(100.0) | 296(100.0) | 411(100.0) | | |

4.7 Alcohol Dependence

A total of 221(13%) respondents were moderately dependent on alcohol compared to 83(4.9%) who were lowly dependent. (Table 7)

Table 7: Prevalence of Alcohol Dependence

| Categories of Alcohol Dependence | Prevalence of Alcohol Dependence | |
|----------------------------------|----------------------------------|-------------|
| | Frequency | Percent |
| | N(%) | N(%) |
| Low | 83 | 4.9 |
| Moderate | 221 | 13.0 |
| High | 91 | 5.4 |
| Total | 395 | 23.2 |

4.8 Factors affecting alcohol dependence

Of the 81 respondents who reported low alcohol dependence, 49(60.5%) lived on campus compared with 32(9.5%) that lived off campus. ($p < 0.05$). Furthermore, of the 215 respondents who reported moderate alcohol dependence, 163(75.8%) were Christians compared to 46(21%) who were Muslims. (Table 8)

Table 8: Alcohol dependence by selected variables

| Variable | Categories of alcohol dependence | | | | χ^2 | P-value |
|------------------------------------|----------------------------------|-------------------|------------------|-------------------|----------|---------|
| | Low | Moderate | High | Total | | |
| <u>Place of residence</u> | | | | | | |
| On-campus | 49(60.5) | 108(50.7) | 35(40.7) | 192(50.5) | 6.546 | 0.038 |
| Off-campus | 32(39.5) | 105(49.3) | 51(59.3) | 168(49.5) | | |
| Total | 81(100.0) | 213(100.0) | 86(100.0) | 380(100.0) | | |
| <u>Peer group influence</u> | | | | | | |
| At home | 40(50.6) | 81(39.1) | 30(33.3) | 151(100.0) | 10.850 | 0.093 |
| At school | 17(21.5) | 35(16.9) | 13(14.4) | 65(100.0) | | |
| Bar, pub or restaurant | 18(22.8) | 72(34.8) | 36(40) | 126(100.0) | | |
| Some other place | 4(5.1) | 19(9.2) | 11(12.2) | 34(100.0) | | |
| Total | 79(100.0) | 207(100.0) | 90(100.0) | 376(100.0) | | |
| <u>Marital Status</u> | | | | | | |
| Single | 79(96.3) | 211(95.5) | 86(94.5) | 376(95.4) | 4.187 | 0.651 |
| Married | 3(3.7) | 8(3.6) | 3(3.3) | 14(3.6) | | |
| Divorced | 0(0) | 1(0.5) | 2(2.2) | 3(0.8) | | |
| Separated | 0(0) | 1(0.5) | 0(0) | 1(0.3) | | |
| Total | 82(100.0) | 221(100.0) | 91(100.0) | 394(100.0) | | |
| <u>Religion</u> | | | | | | |
| Christianity | 67(83.8) | 163(75.8) | 52(57.8) | 282(73.2) | 24.222 | 0.000 |
| Islam | 13(16.3) | 46(21.4) | 33(36.7) | 92(23.9) | | |
| Traditional | 0(0) | 1(5) | 4(4.4) | 5(1.3) | | |
| Others | 0(0) | 5(2.3) | 1(1.1) | 6(1.6) | | |
| Total | 80(100.0) | 215(100.0) | 90(100.0) | 385(100.0) | | |

| <u>Ethnicity</u> | | | | | | |
|--------------------------------------|------------------|-------------------|------------------|-------------------|--------|-------|
| Yoruba | 54(65.9) | 148(67.9) | 69(79.3) | 271(70.0) | | |
| Igbo | 13(15.9) | 45(20.6) | 10(11.5) | 68(17.6) | 13.759 | 0.032 |
| Hausa | 1(1.2) | 4(1.8) | 4(4.6) | 9(2.3) | | |
| Others | 14(17.1) | 21(9.6) | 4(4.6) | 39(10.1) | | |
| Total | 82(100.0) | 218(100.0) | 87(100.0) | 387(100.0) | | |
| <u>Family drinking habits</u> | | | | | | |
| Parents | 30(36.6) | 75(34.2) | 47(52.2) | 152(100.0) | | |
| Siblings | 23(28.0) | 62(28.3) | 21(23.3) | 106(100.0) | 9.282 | 0.054 |
| None | 29(35.4) | 82(37.4) | 22(24.4) | 133(100.0) | | |
| Total | 82(100.0) | 219(100.0) | 90(100.0) | 391(100.0) | | |
| <u>Level of Education</u> | | | | | | |
| 100 | 3(3.6) | 4(1.8) | 6(6.7) | 13(3.3) | | |
| 200 | 29(34.9) | 100(46.1) | 36(40.0) | 165(42.3) | | |
| 300 | 24(28.9) | 49(22.6) | 18(20) | 91(23.3) | 11.950 | 0.288 |
| 400 | 24(28.9) | 59(27.2) | 27(30.0) | 110(28.2) | | |
| 500 | 3(3.6) | 5(2.3) | 2(2.2) | 10(2.6) | | |
| 600 | 0(0) | 0(0) | 1(1.1) | 1(0.3) | | |
| Total | 83(100.0) | 217(100.0) | 90(100.0) | 390(100.0) | | |

4.9 Multinomial Logit Regression for predictors of Alcohol dependence.

4.9.1 Low dependence relative to moderate dependence:

Ethnicity: Respondents who are Yoruba's are 1.6 times less likely to have low alcohol dependence compared to others. (95% CI=0.265-1.365 ; $p > 0.05$)

Place of residence: Those that live on campus are 1.3 times more likely to have low alcohol dependence compared to those who lived on campus. (95% CI=0.762-2.224 ; $p > 0.05$)

Family drinking habit: Respondents with siblings that have drinking habits are 1.1 times more likely to have low alcohol dependence compared to parents with drinking habits who are 1.1 times less likely to have low alcohol dependence. (95% CI= 0.551-2.071 ; $p > 0.05$). (Table 9.1)

4.9.2 High dependence relative to moderate dependence:

Ethnicity: Respondents who are Igbo's are 1.2 times less likely to have high alcohol dependence compared to Yoruba and Hausa respondents who are 2 times more likely to have high alcohol dependence respectively. (95% CI= 0.227-3.105 ; $p > 0.05$)

Place of residence: Those that live on campus are 1.7 times less likely to have high alcohol dependence compared to those who lived on campus. (95% CI= 0.347-1.018; $p < 0.05$)

Family drinking habits: Respondents with siblings that have drinking habits are 2 times more likely to have high alcohol dependence compare to parents with drinking habits who are 1.5times less likely to have high alcohol dependence. (95% CI= 1.013-3.816; $p < 0.05$). (Table 9.2)

Table 9: Multinomial logistic analysis for alcohol dependence

Table 9.1: Low Alcohol Dependence

| Variables | Standard Error | p-value | OR | 95% Confidence Interval | |
|------------------------------|----------------|---------|-------|-------------------------|-------------|
| | | | | Lower bound | Upper Bound |
| Constant | 0.453 | 0.183 | | | |
| Ethnicity | | | | | |
| Yoruba | 0.416 | 0.219 | 0.600 | 0.265 | 1.356 |
| Igbo | 0.498 | 0.133 | 0.475 | 0.180 | 1.254 |
| Hausa | 1.183 | 0.418 | 0.384 | 0.038 | 3.899 |
| Others | | | | | |
| Place of Residence | | | | | |
| On Campus | 0.273 | 0.334 | 1.302 | 0.762 | 2.224 |
| Off Campus | | | | | |
| Family Drinking Habit | | | | | |
| Parents | 0.345 | 0.800 | 0.916 | 0.466 | 1.800 |
| Siblings | 0.338 | 0.844 | 1.069 | 0.551 | 2.071 |
| None | | | | | |

The reference category is moderate

Table 9.2 High Alcohol Dependence

| Variable | Coefficient | p-value | OR | Confidence Interval | |
|------------------------------|-------------|---------|-------|---------------------|-------------|
| | | | | Lower bound | Upper Bound |
| Constant | 0.612 | 0.021 | | | |
| Ethnicity | | | | | |
| Yoruba | 0.586 | 0.184 | 2.176 | 0.690 | 6.859 |
| Igbo | 0.667 | 0.793 | 0.840 | 0.227 | 3.105 |
| Hausa | 1.055 | 0.525 | 1.957 | 0.247 | 15.475 |
| Others | | | | | |
| Place of Residence | | | | | |
| On Campus | 0.275 | 0.058 | 0.594 | 0.347 | 1.018 |
| Off Campus | | | | | |
| Family Drinking Habit | | | | | |
| Parents | 0.370 | 0.306 | 0.685 | 0.332 | 1.413 |
| Siblings | 0.338 | 0.046 | 1.966 | 1.013 | 3.816 |
| None | | | | | |

The reference category is moderate

CHAPTER FIVE

DISCUSSIONS

5.1 Discussion

This study described alcohol dependence and illicit drug use among undergraduate students of University of Ibadan and The Polytechnic Ibadan.

Alcohol, with a lifetime prevalence rate of about 52 per cent, was seen to have 24 per cent prevalence among respondents second only to marijuana in the list of commonly used drugs. This is consistent with previous findings in Nigeria (Ogunremi et al 1981, 1985). The reasons for the extensive use of alcohol by youths in Nigeria can be found in its ready availability and the lack of legal sanctions on its production, distribution and consumption. There is no age or time restriction on alcohol use in most parts of the country.

Another interesting finding in the study was that although, on the whole, males used alcohol more than females, the difference was small, reaching statistical significance when dependence was compared. This is also similar to previous findings in Nigeria. Respondents began using alcohol on or before the age of 10 years but the majority of the users began using alcohol at the age of 18 years with females having the larger proportion. The implications of these findings are that educational measures should be aimed at both sexes and should begin in primary school.

The study also revealed that illicit drugs were used by students. Unlike previous studies in Nigeria (V.O Oviasu, O.O Ogunremi et al 1979), however, in which the use of stronger stimulants, such as amphetamine, Proplus, ephedrine and Ritalin, was reported, the majority (8.2 per cent) of the users in this study used mild, common and cheap drugs (tobacco and marijuana). This finding is similar to that of a study carried out in which 92 per cent of a sample of university students claimed to have used mainly coffee and cola nuts (J.J Nevadomsky, 1985). Further research is needed on the reasons for students' preference for tobacco and marijuana. The high prevalence rates recorded for tobacco and marijuana can be explained by their indiscriminate use in Nigeria. They are easily obtained in make shift supermarkets. The dangers

associated with their indiscriminate use are numerous; among other things, they are often used to inflict injuries on self or others (R.G. Smart, 1980). There is, therefore, a need for governmental control of the sale of these drugs. The public should also be made more aware of the dangers of indiscriminate use of such drugs.

The prevalence rate recorded for the use of hypno-sedatives in this study was 0.7 per cent which is much lower to the figure recorded in a similar study by Ogunremi and Rotimi, (1979). Findings in this study's revealed that more males than females claimed to use illicit drugs; the reason for this need to be investigated. The sale of tobacco in Nigeria should be more strictly controlled by the Government because, apart from being addictive, it also can lead to serious health issues.

Only 2.1 per cent of the respondents in this study confessed to having used cannabis. This low prevalence rate is similar to those found in some studies in Nigeria (J.C Ebie, O.A Pela, 1981) but lower than the rates of others (O.G Oshodin, 1981). There may have been some degree of underreporting because the use of cannabis is illegal and socially condemned in Nigerian society. There had been several news media reports on increased trafficking and use of marijuana, cocaine and heroin and on the arrests of pushers in Lagos, a neighbouring state. Although the low lifetime prevalence rate of 6.9 per cent in this study might imply some degree of underreporting, it is probably more a reflection of the low use of illicit or hard drugs in general.

5.2 Limitations of the study

The limitation of this study include incompleteness and inconsistency of the data.

CONCLUSION

University students in many countries are at elevated risk for heavy drinking with serious immediate health risk such as drink- driving and other substance use and longer term risks such as alcohol dependence.

This study showed that drug abuse, as it relates to the use of illicit or dangerous drugs, is not common in Ibadan. None the less, there is a need to embark on a comprehensive drug education campaign among university and polytechnic students in Ibadan to make students more aware of the dangers inherent in the use of such drugs. The abuse of less commonly used drugs should

also be continuously monitored. To obtain a better general picture of alcohol dependence and drug use in Ibadan, similar studies should be carried out among other segments of the population, including other student groups, non-student youth, families, artisans, civil servants and law enforcement agents.

RECOMMENDATION

There is need for more comprehensive studies with systematic methodologies in Nigeria to yield representative results on alcohol use and related risk in university setting. The abuse of less commonly used drugs should also be continuously monitored. Also, we recommend alcohol and drug law enforcement policies should be reviewed and prevention programmes initiated among adolescents.

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