

CURRENT ALCOHOL USE AND MENTAL HEALTH OF ADOLESCENTS AMONG SECONDARY SCHOOL STUDENTS IN NAKURU COUNTY, KENYA.

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ABSTRACT

Adolescents engage in behaviours that compromise their health and future potentials. However, these behaviours are preventable. The current study was designed to establish the association between current alcohol use and the mental health state of secondary school students in Nakuru County, Kenya. Multi-stage cluster, stratified proportionate and simple random sampling methods were used to select participating divisions ($n=6$), schools ($n=14$) and students ($n=1000$). Global School based Health Survey (GSHS) was used to collect data on health risk behaviours. Sixteen percent ($n=161$) of students reported use of alcohol 30 days prior to the survey and of these 23.6 ($n=38$) and 32.9% ($n=53$) reported a low state of mental health and had seriously considered attempting suicide. The study established that an alcohol drinker was 1.3 (95% C.I: 1.282-1.878) times likely to report a low state of mental health than an alcohol abstainer. A co-occurrence between adolescents' mental health and alcohol use provide an opportunity to draw together separate areas of research in designing a comprehensive approach that may promote better health and education outcomes in secondary schools.

Key words: Adolescents, co-occurrence, current alcohol use, mental health and health risk behaviour.

INTRODUCTION

Most individuals with alcohol problems initiate drinking during adolescence, a period when not only the body is changing dramatically, but behavioural, cognitive, emotional, and attitudinal changes also take place (Dawson, 2000; Grant *et al.*, 2006; Maggs and Schulenberg, 2005; Semlitz & Gold, 1986). Repeatedly using alcohol (frequency or quantity) at such a critical stage in life may result in detrimental effects on brain development. For example, alcohol exposure has been associated with a greater risk of disrupted hippocampus functions, including memory, in animal models (Spear, 2002; Spear and Varlinskaya, 2005; & White and Swartzwelder, 2005). These

alcohol-related cognitive, emotional, and behavioural impairments may then furthermore exert a cascading effect on subsequent health and adjustment (National Research Council, 2004).

Globally, up to 20% of children and adolescents suffer from a disabling mental illness and suicide is the third-leading cause of death (12%) among adolescents after homicides (14%) and accidents (37%) (WHO, 2003). With world-wide crises involving children impacted by war, exploited for labour and sex, orphaned by AIDS, and forced to migrate for economic and political reasons, the dimensions of the burden of compromised mental health and mental disorders are increasingly evident. Lack of attention to the mental health of children and adolescents may lead to mental disorders with lifelong consequences that reduce the capacity of societies to be safe and productive (WHO, 2003). Substance abuse is the second-most common risk factor for suicide after mood disorders with adolescents and the figure is higher with alcohol or drug misuse playing a role in up to 70% of suicides (Frank *et al*, 2001; Fadem, 2003).

Adolescent mental health

At any given time, about 10% of the adult population globally and about 1 in 3 adults attending a primary health center suffers from a mental disorder (Lopez *et al* 2006). It is also noted that depression and anxiety (the “common mental disorders”) and alcohol and drug abuse (the “substance abuse disorders”) are the most frequent of all mental disorders. Psychotic disorders, such as schizophrenia and bipolar disorder, although relatively less common, have been documented as profoundly disabling (Kessler, *et al*, 2005). According to this source, it is no surprise that mental disorders figure prominently in the list of leading global causes of disability. The burden is the greatest during the most productive years of life (young adulthood) when about 75% of all mental disorders seen in adults begin (Kessler, *et al*, 2005). It is further noted that among people aged 10 to 59 years in developing countries, four conditions linked to mental health and alcohol abuse can be found in the 10 leading causes of death (road traffic accidents, self-inflicted injuries, violence, and cirrhosis of the liver) (Lopez *et al* 2006).

Furthermore, the same reiterates that if disease burden is measured through the number of years lived with disability (YLD), then uni-polar depressive disorders is the leading contributor to disease burden in developing countries; schizophrenia and alcohol abuse disorders also figure in the leading 10 causes of YLD. Altogether, neuropsychiatric disorders account for 9.1% of disability-adjusted life years (DALYs) in low-income countries and 17.7% of DALYs in middle-income countries.

It has also been documented by Wasserman (2005) that global suicide rates among adolescents in the 15-19 age group was 7.4/100,000. Suicide rates were higher in males (10.5) than in females (4.1). This applies in almost all 90 countries studied. The exceptions are China, Cuba, Ecuador, El Salvador and Sri Lanka, where the female suicide rate was higher than that of males. Although data on suicide is not readily available in Kenya, according to the 2008 Kenya Police Crime Report, in 2006 there were 362 suicide cases reported compared to 221 in 2007,

a decrease of 34 per cent. But what seemed like a declining trend in 2007 rose to 266 people, in 2008. This averages 20 suicides per month and these only the reported cases (Wanja, 2010).

Youth with better mental health are physically healthier, demonstrate more socially positive behaviours and engage in less risky behaviour (Resnick, 2000). Conversely, youth with mental health problems, such as depression, are more likely to engage in health risk behaviours (Brooks *et al* 2002). Furthermore, youths' mental health problems pose a significant financial and social burden on families and society in terms of distress, cost of treatment, and disability (Busch & Barry, 2007). Most mental health problems diagnosed in adulthood begin in adolescence. Half of lifetime diagnosable mental health disorders start by age 14; this number increases to three fourths by age 24 (Kessler, *et al.* 2005). The ability to manage mental health problems, including substance use issues and learning disorders, can affect adult functioning in areas such as social relationships and participation in the workforce.

Adolescent alcohol use

Alcohol is the most commonly used drug in the world including in Kenya. In USA, alcohol use remains widespread with 72% of students indicated to have consumed alcohol (more than a few sips) by the end of high school and 38% had done so by 8th grade. In fact, 55% of 12th graders and 18% of 8th graders in a 2008 report indicated that they had drunk alcohol at least once in their life (Johnston, O'Malley & Bachman, 2008). According to a NACADA report entitled *Rapid Situation Assessment of Drug and Substance Abuse in Kenya* (2007) 8% (n=75) of children aged 10-14 indicated that they have ever used alcohol. Of these, 56% and 44% were male and female respectively. The same children in urban areas are more likely to use packaged legal alcohol (4.1%) than those in rural areas (1.6%). Conversely, traditional liquor is likely to be consumed by rural children (6.4%) than urban ones (1%). People aged 15-65, 39% were using any type of alcohol; of these 2.6 and 11.7% were aged 15-17 and 18-24 years respectively. In Rift Valley where Nakuru District falls, 12.5% respondents indicated that they had never used alcohol in their life.

Besides the direct effects of intoxication and addiction, alcohol use has been associated with about 20% to 30% each of oesophageal cancer, liver disease, homicide, intentional injuries, epilepsy, and motor vehicle accidents worldwide (WHO, 2002). Unintentional injuries are the leading cause of death among 15- to 25-year-olds and many of these injuries are related to alcohol use (Facy, 2000). Young people who drink are more likely to use tobacco and other drugs and engage in risky sexual behaviour, than those who do not drink (Hibell *et al.*; 2000; Bonomo *et al.*, 2001.). Adults who began to use alcohol before age 15 are five times more likely to report previous-year alcohol dependence or abuse than those who began alcohol use at age 21 or older (NSDUH, 2004).

Association of adolescent mental health and alcohol use

Substance abuse is the second most common risk factor for suicide after mood disorders (Frank *et al.*, 2001). Both chronic substance misuse as well as acute substance abuse is associated with suicide. This is attributed to the intoxicating and inhibiting effects of many psychoactive

substances; when combined with personal grief such as bereavement the risk of suicide is greatly increased (Fadem, 2003). More than 50% of suicides are related to alcohol or drug use. Up to 25% of drug addicts and alcoholics commit suicide. In the United States 16.5% of suicides are related to alcohol (CDC, 2006). Alcoholics are 5 to 20 times more likely to kill themselves while the misuse of other drugs increases the risk 10 to 20 times. About 15% of alcoholics commit suicide, and about 33% of suicides in the under 35's have a primary diagnosis of alcohol or other substance misuse; over 50% of all suicides are related to alcohol or drug dependence.

In adolescent's alcohol or drug misuse plays a role in up to 70% of suicide. Adolescents who are intoxicated are at high risk of successful suicide and of hurting others through accidents or violence (Mack & Frances, 2003). While intoxicated, an adolescent who has just broken up with a romantic partner or who has failed an examination may act against herself or himself or others in a way he or she would not when not under the influence of alcohol. Furthermore, this argument is consistent with the results of past studies that reiterate that who use alcohol more were more likely to experience problems within the attention, thoughts and somatic syndromes as compared with their alcohol naïve counterparts (Spear, 2002; Spear and Varlinskaya, 2005 & White and Swartzwelder, 2005).

Objectives of the study

The study aimed to achieve the following objectives:

1. To determine prevalence of adolescent alcohol use among secondary school students of Nakuru district, Kenya
2. To establish association of adolescent alcohol use and mental health among secondary school students of Nakuru district, Kenya

METHODOLOGY

Study Design

The study was a cross-sectional descriptive survey as data was collected once to establish co-occurrence of adolescent alcohol with their mental health in both public and private secondary schools in Nakuru District, Kenya.

Study Population, Sample Size and Sampling Procedures

The study was carried out in Nakuru District, Kenya. This district consists of 45 public and 40 private secondary schools with a total student population of 23,404 as at July, 2008. The study focused on 14 schools with enrolment of 6450. A total of 1000 students from 14 secondary schools between ages 13 to 19 were sampled to participate in the study. Of these students, a majority were from public schools (71%) while the rest were from private schools (29%). The male students were 67 % as compared to females who comprised 37%. The participants were dispersed among all the Forms with 19.9, 25.6, 25.2 and 28.8 % in Forms 1-4 respectively.

Multi-stage cluster, probability proportionate to size, stratified and simple random sampling methods were used to select the participating divisions, schools and students.

Data Collection Procedures and Statistical Analysis

Global School-Based Student Health Survey (GSHS) (2003) was used for the data collection. GSHS was adopted from *Youth Risk Behaviour Survey* (YRBS) from US and modified for Kenyan adaptation in 2003. The researchers obtained a letter of introduction from Egerton University which was used to get research authorization and clearance from all the gatekeepers (Ministry of Health, Ministry of Science and Technology and Ministry of Education officers). The research assistants administered the questionnaires to the students who were given 30 minutes to answer the questions and then questionnaires were collected immediately at end of the response time. The data procedure was appropriate as a high response rate was expected. Completing the survey was voluntary and students were assured of total confidentiality. Students had an option of answering a question or leaving it blank if they chose to.

Current alcohol use was defined according to the following question: 'During the past 30 days, how many days did you have at least one drink containing alcohol?', Then it was coded as dichotomous variable (users=1 and non-users=0). Mental health index was formed by summing up scores of questions 28 to 33 in GSHS (2003). Then the index was divided into three categories viz low (6-10), moderate (11-16) and high (17-20). All statistical analyses were conducted with Statistical Package Social Sciences (SPSS) 17.0 software and all tests were done at 0.05 level of confidence. Logistic regression was used to establish the co-occurrence of adolescent alcohol use and low mental health. Chi-square was used to test independence of age, gender and suicidal behaviours with alcohol use.

Ethical considerations

The researchers explained the purpose of the study to participants in order for them to make informed decision on whether to participate in the study or not. To ensure anonymity, the participants were not required to write their names on questionnaires. The identities of schools used were concealed and study findings were not reported on the basis of individual schools.

RESULTS

Prevalence of Adolescent Alcohol Use

The results indicated that there were 16.1% (n=161) of students used alcohol 30 days prior to the study. Of these 11.2% (n=18) and 9.9% (n=16) indicated that they were drunk at least 10 days a month and consumed at least 4 drinks per day when they drank responsibly. Thirty three percent of the respondents indicated they used wine as compared to 26% who used local brews.

Table 1: Frequency of Alcohol Drinkers by Type

Alcohol type	Frequency	Percent
Beers	33	20.5
Wine	53	33.0
Spirits	33	20.5
Local Brews	42	26.0
Total	161	100.0

Results in Table 2 indicate that there was a statistically significant relationship between current alcohol use and age of the respondent ($\chi^2 = 19.465$, $df = 6$ $p < 0.05$) but significant relationship was not established between gender and alcohol use ($\chi^2 = 1.180$ $df = 2$ $p > 0.05$). The majority of alcohol drinkers were aged 16 and above (70.2%) and male drinkers were 64.0%.

Table 2: Demographic Characteristics and Adolescent Alcohol Use

Characteristic	Abstainers Frequency	Percent	Drinkers Frequency	Percent
Age				
13 years	123	14.7	19	11.8
14 years	81	9.7	3	1.9
15 years	174	20.7	26	16.1
16 or above years	460	54.8	113	70.2
$\chi^2 = 19.465$; $df = 6$ $p < 0.05$				
Gender				
Male	468	55.8	103	64.0
Female	371	44.2	58	36.0
$\chi^2 = 1.180$; $df = 2$ $p > 0.05$				

Association of Adolescent Alcohol Use and Mental Health

Statistically significant relationship was established between current adolescent alcohol use and mental health ($\chi^2 = 6.037$; $df = 2$ $p < 0.05$). Sixteen percent ($n = 161$) of students reported use of alcohol 30 days prior to the survey, 23.6% ($n = 38$) of those who had a low state of mental health were drinkers as shown in Table 3

Table 3: Adolescent Mental Health and Alcoholic Use

Alcohol use						
Mental health	Abstainers		Drinkers		Frequency	Percent
	Frequency	Percent	Frequency	Percent		
High	26	3.1	7	4.3	33	3.3
Moderate	671	80.0	116	72.0	787	78.7
Low	142	16.9	38	23.6	180	18.0
Total	839	83.9	161	16.1	1000	100.0

$\chi^2 = 6.037$; $df = 2$ $p < 0.05$.

Cross tabulation results in Table 4 indicated that there were statistically significant associations between seriously considering attempting suicide ($\chi^2 = 21.356$; $df = 2$ $p < 0.05$) and making a plan to commit suicide ($\chi^2 = 24.580$; $df = 2$ $p < 0.05$) with alcohol use. Of the students who reported use of alcohol 30 days prior to the survey, 32.9 (n=53) and 31.6 % (n=51) seriously considered attempting suicide and making a plan on how to commit suicide respectively, 12 months preceding the study.

Table 4: Adolescents Suicidal Behaviours and Alcohol Use

Responses	Abstainers		Drinkers		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Seriously considering attempting suicide during last 12 months						
Yes	146	17.4	53	32.9	199	19.9
No	692	82.6	109	67.1	801	80.1
$\chi^2 = 21.356$; $df = 2$ $p < 0.05$						
Making a plan on how to commit suicide during last 12 months						
Yes	131	15.6	51	31.6	182	18.2
No	708	84.4	110	68.3	818	81.8
$\chi^2 = 24.580$; $df = 2$ $p < 0.05$						

Logistic regression analysis was used to analyze the likelihood of respondent being in low mental health when one was an alcohol drinker than when one abstained from alcohol. The model was tested and it was significant ($\chi^2 = 4.790$; $df = 1$ $p < 0.05$). Logistic regression analysis indicated that the alcohol drinker was 1.3 (95% C.I: 1.282-1.878) times likely to report low state of mental health than alcohol abstainer

DISCUSSION

Sixteen percent of students used alcohol 30 days preceding the survey and results were comparable to past studies that indicated that some students do use alcohol (Johnston, O'Malley & Bachma, 2008; NACADA, 2007). In Nakuru, packed drinks (wines and beers) were the type of alcohol most used, a fact which concurred with NACADA's findings in their report entitled Rapid Situation Assessment of Drug and Substance Abuse in Kenya (NACADA, 2007). Being older was a risk factor for adolescent alcohol use which was consistent with other past studies. The inferred association between adolescent alcohol use with increased likelihood of low mental health status among students concurred with the findings reported other past studies (CDC, 2006; Mack & Frances, 2003). Prior research has found elevated occurrences of diagnosed mental disorders among alcohol using youths (Sbrana et al., 2005 & Valentiner et al, 2004).

CONCLUSION

It is imperative to understand correlations that are more likely to appear during specific developmental stages in order to identify the young people who are at greater risk of transitioning into stages of greater alcohol involvement (binging, alcohol abuse or dependence) and intervene to decrease alcohol-related cognitive, emotional, and behavioural impairments. Literature supports that alcohol-using young people were more likely to experience certain emotional or behavioural problems than their alcohol-abstainer counterparts and once alcohol drinking was started, the emergence of certain mental health syndromes was more sensitive to the increased consumption of alcoholic beverages. The current study has revealed that current alcohol use increases the relative risk of low mental health status among students and vice-versa. The co-occurrence is not proof of cause-effect but in essence it implies that there is a symbiotic relationship between adolescents' current alcohol use and low mental health status. Alcohol use is not only a risk factor for low mental health but is also a negative coping strategy for those with low mental health. Therefore, there is need for a comprehensive programme that targets more than one behaviour pattern that threatens the health and potential of adolescents. Alcohol-related interventions need to incorporate strategies that promote the mental health of adolescents.

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