

Prevalence of Alcohol Use Disorder among Students in Mount Kenya University, Nairobi

Rahab W. Gathuci¹, Peterson Kimiru Mwangi² and Manya Stephen³

¹Clinical Psychology, Daystar University.

²United States International University-Africa.

³Alupe University College, Kenya.

ARTICLE INFO

Article history:

Received: 20 November 2019;

Received in revised form:

19 December 2019;

Accepted: 29 December 2019;

Keywords

Prevalence,
Alcohol,
Alcohol use disorder,
Mount Kenya University,
Nairobi,
Social Drinkers,
Substances,
Abuse,
Drinking Rate.

ABSTRACT

Studies have shown that alcohol use is a vice that has serious effects on the users. However use of the substance has been found to be highly prevalent among various populations including University students. In order to ascertain this assertion, this study examined the prevalence of alcohol use among the students of Mount Kenya University, Kenya. Data was collected from a population of 258 participants from Mount Kenya University who were between 18-26 years of age. The sample of the study comprised of 126 undergraduate students from the said university. This sample was selected using stratified purposeful sampling method. The instrument that was used for screening alcohol use among the students was the Alcohol Use Disorder Identification Test (AUDIT). Participants who scored 7 or less in AUDIT were considered to have low risk to AUD, hence they were casual and social drinkers whereas, those who scored 8 and above were diagnosed to exhibit alcohol use disorder. The distribution of participants' gender scores showed that male participants who had AUD were higher at 10.9% as opposed female participants who had AUD at 5.5%. The frequency of participants who scored 7 or less were higher (215, 83.7%) compared to those who scored 8 or above on AUDIT (42, 16.3%). Therefore, the prevalence of alcohol use disorder among the students of Mount Kenya University was 16.3%. Recommendations were made for stakeholders to arrange for strategic therapeutic activities for different groups of students and especially those that are almost graduating from University.

© 2020 Elixir All rights reserved.

Introduction

Alcohol is the most commonly abused substance in Kenya and currently, it causes the greatest harm across various populations in the country. Studies indicate that it affects about 70% of families in Kenya and that there are about two million people addicted to substances of abuse, of whom, 90% are addicted to alcohol (WHO, 2011).

The excessive use of alcohol by students in institutions of higher learning has been globally reported in literature. A report from SAMHSA, (2013) indicated that in the US, binge drinking among youth aged 18-25 was at 39.5% and heavy drinking was at 12.7%. Similarly, the lifetime prevalence rate of alcohol use among university students in Turkey was reported at 54% (Tot, Yazici, Metin, Bal, & Evdem, 2004) indicating that alcohol abuse is a common problem among university students. Another study carried out in Sweden among university students indicated that 96% of all students had consumed alcohol during the previous year (Bullock, 2004).

Alcohol consumption among students in Africa is horrifying, reaching well over 5 billion litres of alcoholic beverage per year. In West Africa, a study carried out among Nigerian undergraduate students found that 25.8% used alcohol (Oshikoya & Alli, 2006) and still in Nigeria, the prevalence rate of alcohol consumption was 78.4% among the undergraduate students (Chikere & Mayowa, 2011). A study carried out in Tanzania among college students found a prevalence of 71% with most of them recording an AUDIT

score of >eight (Francis et al., 2014). In Ethiopia, it was reported that the lifetime prevalence rate of alcohol consumption was 60% among college students (Aklog, Tiruneh, & Tsegay, 2013).

In South Africa, a survey conducted at the University of Venda reported on the use of alcohol on campus from 209 students interviewed. The results showed that over 65% of them used alcohol, of which 49% abuse it (Kyei & Ramagoma, 2017). Additionally, in Nigeria the prevalence of alcohol use among university students was at 78.4% with 27% being heavy drinkers (Chikere & Mayowa, 2011). Another study done in Malawi, reported the prevalence of alcohol abuse among university students as 54.1% among males and 16.5% among females (Zverev, 2008). Wakgari and Aklilu (2011) found that 31% of medical students of Addis Ababa University from first year to internship were lifetime users of alcohol and 22% reported drinking alcohol in the past year.

Studies in Tanzania and Uganda revealed prevalence rates of alcohol use of 30.3% and 41.1% respectively (Francis, Grosskurth, Changalucha, Kapiga, & Weiss, 2014). Additionally, Stafstrom and Agarth (2012) found that almost half of the students in Mbarara University in Uganda were current alcohol users, and a quarter of them had engaged in heavy episodic drinking (Stafstrom & Agarth, 2012).

World Health Organization indicates that the Africa has the highest rate of heavy episodic drinking person globally (of 25.1%) which can be contrasted with the lowest rates for

Europe and Western Pacific regions at 11.0% and 8.0%, respectively (WHO, 2011). According to Atwoli et al. (2011) a lifetime prevalence rate of alcohol use among students in Eldoret, Kenya was found as 51.9%.

Alcohol abuse in institutions of higher learning in Kenya threatens the achievement of vision 2030 and holistic wellbeing (GOK, 2012). In general, 30% of Kenyans, aged 15-65 have ever consumed alcohol in their life; 13.3% of Kenyans currently consume alcohol totalling to at least 4 million people. Other researchers reported an 84.2 % preference rate of alcohol abuse among students at a Kenyan university (Ogunde & Leak, 1999). Although it is difficult to authenticate the actual extent and nature of alcohol abuse among students in learning institutions, research indicates that most students, experiment with and abuse alcohol (Chesang, 2013). Hassan's (2013) study on alcohol abuse among Nairobi University students found the prevalence of alcohol to be 63.2%. Regrettably, this is much higher than the prevalence in other East African nations.

However, alcohol abuse in Kenya is not different from the cases already cited and the effectiveness of treatment models has been identified as a key research gap (NACADA, 2011). The report by NACADA indicated that, alcohol use among people aged 15-65 years in Kenya was 14.2% with a lifetime usage of 39% in 2007. It also records that in 2010, there were many deaths reported in various places in Kenya due to alcohol use. Additionally, in a survey by George et al. (2013), alcohol consumption by those aged between 15-65 years was 40%. At Daystar University in particular, a baseline survey carried out in 2011 by Aids and Drug Control Unit (ADCU) showed that 44.8% of respondents were using alcohol (Daystar University [DU], 2011). It is therefore important to evaluate effective preventive and treatment programs that would help alcohol abuse in Kenya and more

so among the young people, who are more vulnerable as indicated by studies by Atwoli et al. (2011) which recorded a lifetime preference of alcohol use of 51.9 % and Hassan (2013) which found a preference of 63.2% among students in Kenya.

2. Methodology

This study was conducted at MKU's two campuses of Nakuru and Nairobi in Kenya. Nairobi campus is located in Nairobi city while Nakuru campus is located in Nakuru town in Nakuru County. The research design that was adopted for this study is a quasi-experimental, which is a type of experimental study design (Creswell, 2015) that identifies two groups with similar characteristics at baseline. The groups are known as experimental group and control group. A quasi-experiment is an empirical study used to estimate the causal impact of an intervention on its target population without random assignment. This design is favoured for a study that seeks to establish change as an outcome of an intervention especially in psychological researches. Through the sampling procedure, the researcher selected the participants who were used in gathering the information to represent the target population under consideration (Bogopane, 2013). The sample size for the current study was be 125 participants, that is, 63 participants in the experimental group (Nairobi campus) and 63 (Nakuru campus) in the control group.

3. Results

At prevalence study phase, data was collected from screened 258 participants who were students of Mount Kenya University, Nairobi campus, Kenya. The 258 participants were between 18-26 years old. This age bracket was grouped into three: Age 18-20, 21-23, and 24-26 respectively. The majority of the participants were aged 21-23 (158, 62.2%) compared to those aged 24-26 (59, 23.2%) and aged 18-20

Table 1. Background Characteristics of Prevalence Study

Variables	Frequency	Percent	Mean	Std. Deviation
Participant's Gender				
Male	127	49.2	1.5078	.50091
Female	131	50.8		
Participant's Age				
18-20	37	14.5	2.0898	.61015
21-23	159	62.1		
24-26	60	23.4		
Participant's Year of Study				
1 st Year	52	20.2	2.5543	1.06909
2 nd Year	74	28.7		
3 rd Year	69	26.7		
4 th Year	63	24.4		
Participant's Mode of Study				
Regular/Day	239	93.0	1.0700	.25571
Evening	18	7.0		
Participant's Marital Status				
Single but dating	9	3.8	2.0127	.29866
Single but not dating	215	91.1		
Married	12	5.1		
Participant's place of Residence				
On-campus	20	8.5	2.4085	.64312
Off-campus	99	42.1		
Living with family members	116	49.4		
Marital status of Participant's Parents				
Married	188	73.4	1.4320	1.46833
Divorced	4	1.6		
Separated	12	4.7		
Single Parents	25	9.8		
Widow	25	9.8		
Widower	2	0.8		

(37,14.6%) respectively. The mean age among the participants for prevalence study was $2.0898 \pm$ (SD: .61015). There was no significant difference in canonical correlation in the mean age between prevalence study and intervention study ($p = 0.904$).

Table 1 presents the frequency of key socio-demographic characteristics at the prevalence phase of the study using the researcher-generated questionnaire. The participants' gender indicated that the female participants were higher (137, 50.8%) as opposed male participants (127, 49.2%). The mean gender was 1.5078 with a standard deviation of .50091. In terms of age distribution, participants aged 21-23 were higher (158, 62.2%) compared to participants aged 24-26 (59,23.2%) and aged 18-20 (37, 14.6%) respectively.

The mean age among the participants for prevalence study was 2.0898 with a standard deviation of .61015. As regards participant's year of study at the prevalence phase, participants whose year of study was 2nd year was higher (74,28.7%) compared to 3rd year (69, 26.7%), 4th year (63,24.4%) and 1st year (52,20.2%). The year of study mean was 2.5543 with a standard deviation of 1.06909. Distribution of participant's mode of study showed that regular/day mode of study had higher frequency (239, 93.0%) as opposed to evening mode of study (18,7.0%). The mode of study mean was 1.0700 with a standard deviation of .25571.

Further, the distribution of participant's marital status showed that frequency of single but not dating were higher (215,91.1%) compared to single but dating (9,3.8%) and married (12,5.1%). The marital status mean was 2.0127 with a standard deviation of .29866. The distribution of participant's place of residence indicated that participants living with family members were higher (116,49.4%) compared to participants who lived off-campus (99,42.1%) and those who lived on-campus (20,8.5%). The participant's place of residence mean was 2.4085 with a standard deviation of .64312. Distribution of marital status of participant's parents showed that the frequency of married was significantly higher (188, 73.4%) compared to single parents (25,9.8%), widow (25, 9.8%), divorced (12, 4.7%), separated (4,1.6%) and widower (2,.8%). The marital status of participant's parents mean was 1.4320 with a standard deviation of 1.46833.

Table 2 presents the key socio-demographic characteristics of the participants at the prevalence phase of the study and alcohol use disorder. Participants who scored 7 or less in AUDIT were considered to have low risk to AUD, hence they were casual and social drinkers whereas, those who scored 8 and above were diagnosed to exhibit alcohol use disorder. The distribution of participants' gender scores showed that male participants who had AUD were higher at 10.9% as opposed female participants who had AUD at 5.5%. Chi-square test indicated that the distribution of participant's scores on AUDIT among gender frequency was significant ($p = 0.009$). This seems to suggest that frequency of participant's gender on AUDIT scores were statistically significant.

The distribution of AUDIT scores among participant's age shows that frequency of participants who were considered to have AUD was higher among participants aged 21-23 at 10.2% compared to aged 24-26 at 3.5% and aged 18-20 at 2.8%. The chi-square test shows that there was no significant difference in the distribution AUDIT scores among the participant's age group ($p = 0.894$). This means that distribution of AUDIT scores among participant's age group was steady. As regards participant's year of study, the frequency of participants whose scores on AUDIT was considered to exhibit AUD was higher among 4th year participants at 5.9% compared to 1st year at 4.3%, 2nd year at 3.5% and 3rd year at 2.7%. Chi-square test indicates that the distribution was not statistically significant ($p = 0.108$). This is also an indication that there was no significant difference in the distribution of alcohol consumption among the participants' year of study.

Moreover, the distribution among participants' place of residence shows that the frequency of participants whose scores was considered to be AUD was higher among participants who lived with their family at 7.7% compared with the those whose place of residence was off-campus at 6.4% and campus hostels at 2.1%. The distribution was statistically insignificant ($p = 0.537$). Pertaining participant's marital status, frequency of participants who was considered to exhibit AUD was higher among single but not dating at 15.8% as opposed single but dating at 0.9% and likewise among the married participants at 0.9%. The chi-square analysis showed that there was no significant difference in the

Table 2: Frequency of Key Demographic Factors and Alcohol Use Disorder among the Participants

	Total %	Participants Diagnosed with AUD		Chi-Square Test		
		≤ 7 = Low Risk	≥ 8 = High Risk	value	f	Sig.
Participant's Gender						
Male	125 (48.8)	97 (37.9)	28 (10.9)	6.399	1	.009
Female	131 (51.2)	117 (45.7)	14 (5.5)			
Participant's Age						
18-20	37 (14.6)	30 (11.8)	7 (2.8)	.223	2	.894
21-23	158 (62.2)	132 (52.0)	(10.2)			
24-26	59 (23.2)	50 (19.7)	9 (3.5)			
Participant's Year of Study						
1 st Year	52 (20.3)	41 (16.0)	11 (4.3)	6.079	3	.108
2 nd Year	74 (28.9)	65 (25.9)	9 (3.5)			
3 rd Year	67 (26.2)	60 (23.4)	7 (2.7)			
4 th Year	63 (24.6)	48 (18.8)	15 (5.9)			
Participant's Place of Residence						
Campus Hostels	20 (8.5)	15 (6.9)	5 (2.1)	1.244	2	.537
Off-Campus	99 (42.3)	84 (35.9)	15 (6.4)			
Living with family	115 (49.1)	97 (41.5)	18 (7.7)			
Participant's Marital Status						
Single but dating	9 (3.8)	7 (3.0)	2 (0.9)	.147	2	.929
Single but not dating	213 (91.0)	175 (75.2)	37 (15.8)			
Married	12 (5.1)	10 (4.3)	2 (0.9)			

distribution of AUDIT scores among participant's marital status ($p=0.929$).

Table 3: The Prevalence of Alcohol Use Disorder among the Participants at MKU

Variable	Frequency	Percent	Mean & Std. dev.
≤ 7 = Low Risk Alcohol Consumption (Non-Clinical Alcohol Use)	215	83.7%	.16 ± (SD: .37)
≥ 8 = High Risk Alcohol Consumption (Alcohol Use Disorder)	42	16.3%	
Total	257	100%	

Table 3 presents the prevalence of alcohol use among the participants at MKU using AUDIT psychometric instrument to determine participants who were considered to have low risk in developing AUD and high risk to AUD based on their scores. Those who scored 7 or less had low risk and were seen to exhibit non-clinical alcohol use whereas those who scored 8 or above were considered to present with AUD. The frequency of participants who scored 7 or less were higher (215, 83.7%) compared to those who scored 8 or above on AUDIT (42, 16.3%). Therefore, the prevalence of alcohol use disorder among the students of Mount Kenya University was 16.3%. The prevalence of AUD mean was 16 with a standard deviation of .37.

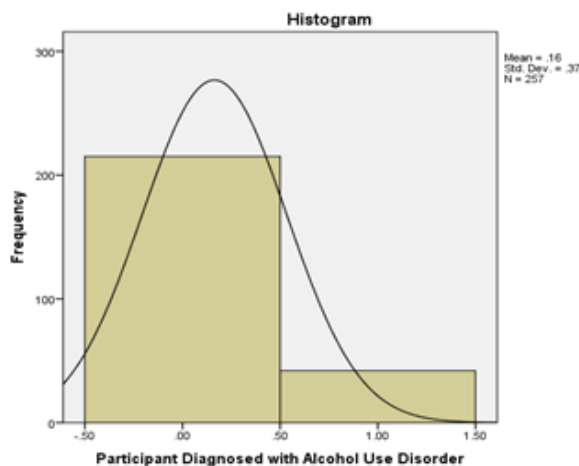


Figure 1. Prevalence of Alcohol Use Disorder among the Participants

Figure 1 presents the frequency of AUD among the participants at MKU. Participants who scored 7 or less were higher compared to participants who scored 8 or less using AUDIT psychometric instrument. The prevalence of AUD among the participants was 16.3% and its means as indicated on the figure was $16 \pm (SD: .37)$.

4. Discussions

The first objective of the study sought to establish the prevalence of alcohol use disorder among students of MKU who participated in the study. This prevalence of AUD was required so as to help the clinicians to determine the high need of clinical services, awareness, psycho-education and plans by clinical psychologists to treat AUD appropriately. It would also help manage and prevent the increasing ratio of alcohol use disorders in private universities in Kenya especially at MKU as a case study. Prevalence of alcohol use was rated with AUDIT and researcher-generated questionnaires. The Alcohol Use Disorders Identification Test (AUDIT) is an established instrument. This is a 10-item questionnaire that was developed for the purpose of screening risky alcohol consumption. It has been reported to be valid and reliable for

use in primary care population (Aalto, Halme, & Seppa, 2011), and is also its acceptable reliability and validity has been demonstrated on a population basis (Bergman & Kallmen, 2002).

The 10-item AUDIT scores for each question range from 0 to 4, with the first response for each question (e.g. never) scoring 0, the second (e.g. less than monthly) scoring 1, the third (e.g. monthly) scoring 2, the fourth (e.g. weekly) scoring 3, and the last response (e.g. daily or almost daily) scoring 4. The item questions 9 and 10, which only have three responses, the scoring was 0, 2 and 4. A total score of 8 or more is associated with harmful or hazardous drinking, a score of 13 or more in women, and 15 or more in men is likely to indicate alcohol dependence. However, for the purpose of rating the prevalence of alcohol use disorder, a score of 7 or less is considered to be non-clinical alcohol use and cannot therefore be classified to be alcohol use disorder. Meanwhile, a score of eight or more is considered to be clinical alcohol use; hence, it is classified as alcohol use disorder.

In the prevalence study of alcohol use disorder among the students of MKU, the results indicated that male students who had AUD were higher at 10.9% as opposed female participants who had AUD at 5.5%. This finding supports the recent study conducted in Iraq where alcohol consumption was reported to be higher among male university participants at 19.7% as opposed female university students at 0.8% (Al-Ameri, Al-Badri, & Lafta, 2016). In a similar study conducted among university students from selected countries of the Carpathian Europe, results indicated that, the prevalence of alcohol use disorder among university students in Poland was higher among male participants (14.1%) as opposed female participants (0.7%). In Slovakia, male participants had a higher prevalence (8.3%) as against female participants (2.3%), in Ukraine, male was also reported to be higher (8.9%) compared to female students (3.3%) and in Romania, the prevalence of AUD was reported to be higher among male university students at 3.7% as opposed to female at 1.5% (Zadarko-Domaradzka et al., 2018).

Interestingly, in a cross sectional study in Nepal; researchers have reported a correlation between depression and alcohol use disorder. However, the prevalence of depression was reported to be higher among female than male participants (RR = 1.48, $P = 0.009$) whereas the prevalence of AUD was higher among males participants than female participants (males, 19.8% and females 1.1%), the rates of AUD was lower among females was (RR = 0.49, $P = 0.0001$) (Luitel, Baron, Kohrt, Komproe, & Jordans, 2018). This study queries why males were more predisposed to alcohol use disorder than their female counterparts. However, WHO (2018) suggested a variety of factors that were responsible for male vulnerability at the individual and environmental level, which affect the levels and patterns of alcohol consumption and the magnitude of alcohol related problems in populations. Environmental factors include economic development; cultural perspective such as norms restricting women to drinking alcohol could be reasons why men tend to consume alcohol more than female participants (World Health Organization (WHO), 2018).

Alcohol consumption varies greatly depending on gender, age and region. This study found that the prevalence of alcohol use was proportionally higher among participants aged 21-23 at 10.2%. This result concurs with several studies across the world. For instance, in both Canada and Australia, risky alcohol drinking is associated with university students aged

20-24 (Sanchez-Ramirez, Franklin, & Voaklander, 2017). In addition, studies among the Swedish population showed that the 18-29 age groups accounted for almost one-third of people who drink dangerously (Bendtsen, Karlsson, Dalal, & Nilsen, 2011). Additionally, the result of this study aligns with the results of a study published in 2017, comparing alcohol consumption for the periods 2001-2002 and 2012-2013, a noticeable increase in the percentage of students aged 21-24 who drink riskily in American population (Grant, Chou, & Saha, 2017). This study agrees with Brandao et al. (2011) that university students are a special group of young adults as far as alcohol consumption is concerned. AUD is pronounced among students aged 21-23 because of increased independence, reduced parental supervision, and more social contacts potentially responsible to the increased consumption of alcohol in this group.

As regards participant's year of study, this study found that the prevalence of AUD was 5.9% among 4th year participants. Several studies have indicated that there was a significant association between between participant's year of study and alcohol use disorder among university students. However, this study seems to contradict several recent findings on prevalence. For instance, in a prevalence study of alcohol abuse among Egerton University students, the researcher found that the prevalence of the phenomenon was among 2nd year at 26.7% (Boitt, 2016). A similar study in Ireland, UK showed the prevalence of alcohol use among 1st year university students contrary to this study (Davoren, Demant, Shiely, & Perry, 2016). Several other studies seemed to concur with Davoren et al. (2016) where prevalence of AUD was reported to be higher among 1st year university students but decreases as the year of study increases (Al-Ameri et al., 2016; Mekonen, Fekadu, Chane, & Bitew, 2017; Zadarko-Domaradzka et al., 2018).

Additionally, this study found the prevalence of AUD among participants living with their family members at 7.7%. This findings also contradicts most of the studies to be among university students who lived with colleagues in school. For instance, Boitt (2016) reported that the high frequency of university students were noticed to be among participants who lived with room mates in hostels as against participants who lived with parents (Boitt, 2016). Similarly, in a study to find the alcohol consumption and associated socio-demographic factors among medical students in an urban locality, the researchers reported that the prevalence of students with AUD were among students who lived in school hostels (54.9%) as against participants who lived at home at 44.1% (Halgar, Anandi, Indupalli, Biradar, & Reddy, 2019). A previous study conducted in Nigeria also concurred with these findings that university students who lived among peers in school hostels were more vulnerable to develop alcohol use disorder than other colleagues who lived among family members (Chikere & Mayowa, 2011).

Likewise, in terms of participant's marital status, the prevalence of AUD was 15.8% among the participants whose marital status was single but not dating. These findings aligned with a study conducted among university students in Southern Iran, where it was reported that the prevalence of AUD was more among university students that were singles at 16.1% as against other marital status (Heydari et al., 2015). Others in addition to this also aligned with the findings of this study reported that university students that were single drink riskily than university students that were married

(Castario-Perez & Calderon-Vallejo, 2014; Lamberti et al., 2017; Mekonen et al., 2017).

Further, the results of this study found that the grand prevalence of alcohol use disorder among the students of Mount Kenya University was 16.3%. This study compared with the results of a similar study conducted among students of Egerton University Kenya, it was found that the prevalence of AUD in this university was higher (21.1%) as opposed to the prevalence of AUD among MKU students (16.3%) (Boitt, 2016). This study observed that the prevalence of alcohol use disorder varies across the globe.

A study in South Africa also reported that the actual prevalence of alcohol misuse on South African campuses was not accurately known (Young & de Klerk, 2008). For instance, researchers have reported a finding among the university students in Bagdah, Iraq, the prevalence of alcohol use disorder was 12.2% (Al-Ameri et al., 2016). The findings of this study was slightly higher in a prevalence study in Italy where it was reported to be 16.1% (Lamberti et al., 2017) among the universities students. The prevalence of hazardous alcohol drinking among private university students in Spain was reported to be 21.6% (Moure-Rodriguez et al., 2016). Similarly, a recent study among medical students in an urban university also reported the prevalence of alcohol consumption to be 25.4% whereas the prevalence of hazardous drinking habit was 19.2%. Prevalence of alcohol dependence among medical students in urban locality as reported in this study was 8.7% (Halgar et al., 2019).

5. Conclusion

The prevalence of AUD among university students is alarming because it was found to be at 16.3% and also high among male students, 4th year students, the singles that were not in relationships and students living with their parents. This study indicated that the marital status of the parents of the participants put those participants at risk to use alcohol. Specifically, university students whose parents were divorced, separated or single were again at risk of hazardous use of alcohol. Notably, many families are currently headed by divorced, separated and single parents. Not only that, this study found that when the participants see father using alcohol or use it excessively, or when mother use the alcohol excessively are predictors of alcohol use disorder. The roles of friends using alcohol excessively or going to parties where alcohol is accessible cannot be over-emphasized as predictive factors of AUD. In addition, when the participants' friends use illicit drugs equally predicts the participants to use other illicit drugs too.

6. Recommendations

In view of the findings of this study, the researcher arrived to the following recommendations:

1. Stakeholders need to increase awareness of the serious effects of alcohol use and enlighten students on the need to be careful in the choice of drinking behavior. Serious and well organized campaigns need to be done on campus at stipulated times by the campus managers and also with invited professionals for students to understand the seriousness of such endeavors.
2. Since the study shows high prevalence of alcohol use with the highest among male students, 4th year students there is need for universities to arrange for strategic therapeutic activities for different groups of students and especially those that are almost graduating. This will help in giving the graduating students hope and help the focus outside university.

7. References

- Aalto, M., Halme, J. T., & Seppa, K. (2011). The Alcohol Use Disorders Identification Test (AUDIT) and its derivatives in screening for heavy drinking among the elderly. *International Journal of Geriatric Psychiatry*, 26(9), 881-885.
- Aklog, T., Tiruneh, G., & Tsegay, G. (2013). Assessment of Substance Abuse and Associated Factors among Students of Debre Markos Poly Technique College in Debre Markos Town, East Gojjam Zone, Amhara Regional State, Ethiopia, 2013. *Global Journal of Medical Research Pharma, Drug Discovery, Toxicology and Medicine*, 13, 1.
- Al-Ameri, R., Al-Badri, H., & Lafta, R. K. (2016). Prevalence of alcohol consumption among university students in Baghdad: A cross-section survey from Iraq. *Epidemiology Biostatistics and Public Health*, 13(1), 72-86.
- Atwoli, L., Mungla, P. A., Ndung'u, M. N., Kinoti, K. C., & Ogot, E. M. (2011). Prevalence of substance use among college students in Eldoret Western Kenya. *BMC Psychiatry*, 11(1), 1-24.
- Bendtsen, P., Karlsson, N., Dalal, K., & Nilsen, P. (2011). Hazardous drinking concepts, limits and methods: Low levels of awareness, knowledge and use in the Swedish population. *Alcohol and Alcoholism*, 46(5), 638-645.
- Bergman, H., & Kallmen, H. (2002). Alcohol use among Swedes and a psychometric evaluation of the alcohol use disorders identification test. *Alcohol Alcohol*, 37(3), 245-251.
- Brandao, Y. S., Correia, D. S., De Farias, M. S., Antunes, T. M., & Da Silva, L. A. (2011). The prevalence of alcohol consumption among the students newly enrolled at a public university. *Journal of Pharmacy and Bioallied Sciences*, 3(3), 345-349.
- Bogopane, L. P. (2013). A critical review of pertinent qualitative research processes, approaches and tools in social sciences. *Journal of Social Sciences*, 35(3), 217-229.
- Boitt, R. K. (2016). The prevalence of alcohol abuse among Egerton university students in Njoro-Kenya. Nairobi, Kenya: A Thesis Submitted to the Department of Psychiatry, Faculty of Medicine in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Clinical Psychology of the University of Nairobi.
- Bullock, Z. (2004). Prevalence of adult binge drinking: A comparison of two national surveys. *American Journal of Preventive Medicine*, 27(1), 197-204.
- Castario-Perez, G. A., & Calderon-Vallejo, G. A. (2014). Problems associated with alcohol consumption by university students. *Revista Latino-Americana de Enfermagem*, 22(5), 214-233.
- Chesang, R. K. (2013). Drug abuse among the youth in Kenya. *International Journal of Scientific and Technology Research*, 2(6), 126-131.
- Chikere, E. I., & Mayowa, M. O. (2011). Prevalence and perceived health effect of alcohol use among male undergraduate students in Owerri, Sought-East Nigeria: A descriptive cross-sectional study. *BioMedical Central Public Health*, 11(118), 1-6.
- Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating qualitative and quantitative research*. (4th ed.). Toronto: Pearson.
- Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating qualitative and quantitative research*. (4th ed.). Toronto: Pearson.
- Davoren, M. P., Demant, J., Shiely, F., & Perry, I. J. (2016). Alcohol consumption among university students in Ireland and the United Kingdom from 2002 to 2014: A systematic review. *BMC Public Health*, 16(173), 317-331.
- Daystar University [DU]. (2011). A baseline survey on incidence and prevalence of substance abuse, HIV, and AIDS among students in Daystar University. Nairobi: Unpublished report.
- Francis, J. M., Grosskurth, H., Changalucha, J., Kapiga, S. H., & Weiss, H. A. (2014). Systematic review and meta-analysis: prevalence of alcohol use among young people in Eastern Africa. *Tropical Medical International Health*, 19(4), 476-488.
- GOK. (2012). *The Mental Health Policy*, Ministry of Medical Services. The Government Printing Press, Nairobi.
- George, G. E., Mugai, W. J., Mugai, N. W., Mugai, W. F., & Nyakwara, S. (2013). Socio-economic factors on alcohol abuse among the youth in Kikuyu District, Kenya. *Research on Humanities and Social Sciences*, 3(7), 96-109.
- Grant, B. F., Chou, T. D., & Saha, R. (2017). Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001-2002 to 2012-2013: Results from the national epidemiologic survey on Alcohol and related conditions. *JAMA Psychiatry*, 74(9), 911-923.
- Halgar, P., Anandi, B., Indupalli, A., Biradar, S., & Reddy, S. (2019). Alcohol consumption and associated socio-demographic factors among medical students in an urban locality. *International Journal of Medical Science and Public Health*, 8(1), 9-16.
- Hassan, M. N. (2013). Factors associated with alcohol abuse among university of Nairobi students. Kenya (Unpublished thesis): University of Nairobi.
- Heydari, S. T., Izedi, S., Sarikhani, Y., Kalani, N., KAlani, N., Akbary, A., Akbari, M. (2015). The prevalence of substance use and associated risk factors among university students in the city of Jahrom, Southern Iran. *International Journal of High Risk Behaviors And Addiction*, 4(2), 76-93.
- Heydari, S. T., Vossoughi, M., Akbarzadeh, A., Kamran, B., Lankarani, K. B., Sarikhani, Y., . . . Tabrizi, R. (2015). Prevalence and risk factors of alcohol and substance abuse among motorcycle drivers in Fars Province, Iran. *Chinese Journal of Traumatology*, 19(2), 79-
- Kyei, K. A., & Ramagoma, M. (2017). Alcohol consumption in South African universities: Prevalence and factors at the University of Venda, Limpopo Province. *Journal of Social Science*, 36(1), 77-86.
- Lamberti, M., Napolitano, F., Napolitano, P., Arnese, A., Crispino, V., Panariello, G., & Giuseppe, G. (2017). Prevalence of alcohol use disorders among under- and post-graduate healthcare students in Italy. *PLOS ONE*, 12(4), 216-230.
- Luitel, N. P., Baron, E. C., Kohrt, B. A., Komproe, I. H., & Jordans, M. J. (2018). Prevalence and correlates of depression and alcohol use disorder among adults attending primary health care services in Nepal: A cross-sectional study. *BMC Health Services Research*, 18(215), 123-135.
- Mekonen, T., Fekadu, W., Chane, T., & Bitew, S. (2017). Problematic alcohol use among university students. *Front Psychiatry*, 8(86), 186-194. doi: 10.3389/fpsy.2017.00086
- Moure-Rodriguez, L., Pineiro, M., Varela, M. C., Rodriguez-Holguin, S., Cadaveira, F., & Caamario-Isoma, F. (2016). Identifying predictors and prevalence of alcohol consumption among university students: Nine years of follow-up. *PLOS ONE*, 27(3), 165-182.
- National Authority for the Campaign against Alcohol and Drug Abuse [NACADA]. (2011). *Alcohol use and stress in university freshmen : A comparative intervention study of two universities*. Nairobi: NACADA.

- Ogunde, O., & Leak, P. (1999). Prevalence of substance use among students in a Kenyan University: A preliminary report. *East African Medical Journal*, 76(6), 301-306.
- Oshikoya, K. A., & Alli, A. (2006). Perception of drug abuse amongst Nigerian undergraduates. *World Journal of Medical Sciences*, 1(2), 133-139.
- Sanchez-Ramirez, D. C., Franklin, R., & Voaklander, D. (2017). Hazardous alcohol use in 2 countries: A comparison between Alberta, Canada and Queensland, Australia. *Journal of Preventive Medicine & Public Health*, 50(5), 311-319.
- Stafstrom, M., & Agarth, A. (2012). Socio-economic determinants for alcohol consumption and heavy episodic drinking in a Ugandan students population. *International Journal of Alcohol Drug Research*, 1(1), 57-67.
- Tot, S., Yazici, K., Metin, O., Bal, N., & Evdem, P. (2004). Psychological correlates of substance use among adolescents in Mersing, Turkey: Public Health.
- Wakgari, D., & Aklilu, A. (2011). Substance use and its predictors among undergraduate medical students of Addis Ababa University in Ethiopia. *BMC Public Health*, 11(1), 660-678.
- World Health Organization (WHO, 2018). Fact Sheet on Alcohol. Retrieved from Newsroom: <https://www.who.int/news-room/fact-sheets/detail/alcohol>
- World Health Organization [WHO]. (2011). Alcohol -use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence. *Nice Clinical Guidelines*, no. 115. National collaborating centre for mental health, Leicester, UK: British Psychological Association.
- Young, C., & de Klerk, V. (2008). Patterns of alcohol use on a south african university campus: the findings of two annual drinking surveys. *African Journal of Drug & Alcohol Studies*, 7(2), 101-112.
- Zadarko-Domaradzka, M., Barabasz, Z., Sobolewski, M., Babiarz, E., Zadarko, B. P., Szybisty, A., & Zadarko, E. (2018). Alcohol consumption and risky drinking patterns among college students from selected countries of the Carpathian Euroregion. *BioMedical Research International*, 147(18), 130-139.
- Zverev, Y. (2008). Problem drinking among university students in Malawi. *College Anthropology*, 32(1), 27-31.