

Stress and Alcohol Use Among College Students: A Case of Molepolole College Students

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Abstract: *The study examined the relationship between stress and alcohol use among college students in Botswana. A total sample of 221 undergraduate students (n113 males and n108 females) was drawn from Molepolole College of Education. All the three years of study were represented as follows: 100 (45%) freshmen, 41 (18.6%) second and 80 (36.2%) third and final year of study. A total of 129 (58.4%) participants reported using alcohol. T-tests and anova analyses showed that more males (78, 60.5%) than females (51, 39.5%) reported using alcohol. Multiple regression analysis revealed that there was no relationship between high stress levels and harmful alcohol use. However, the analyses indicated that students who engaged in alcohol consumption were also more likely to engage in more maladaptive coping styles.*

Keywords: *Molepolole, alcohol, college students, harmful drinking, stress.*

I. Introduction

Similar to their counterparts in other countries, college administrators and primary health care providers in Botswana have continued to grapple with problems associated with risky drinking patterns. For example, Professor Nyati-Ramahobo, a long time faculty and the Deputy Vice Chancellor, Student Affairs, at the University of Botswana, expressed concern about drug and alcohol use at the institution. She observed that there had been cases where students had failed to attend classes because they were either too drunk or too drugged (Setsiba, 2006).

Research indicates that stress is part of daily life, it also documents that college students experience increased stress due to the complexity of college life. As observed by Craig (2004) vulnerability to using alcohol and drugs increases with an increase in risk factors dominating a person's life. This seems to be particularly true for college students. Ford (2007) observed that college presents a significant transition period in a young adult's life. It is a time when students are often no longer under direct parental supervision, and are faced with new social and academic pressures. It is also a time when they enter an environment where the use of intoxicating substances, mainly alcohol, is normative. They are introduced to a new environment where they must navigate many unfamiliar social situations. During this time, they look to their new social groups to help them determine what new attitudes and behaviors are expected or appropriate.

Similarly, alcohol use has been a part of human societies throughout recorded history, however, for the past several decades; it has increased in prevalence particularly among college students. Research findings (Dunn & Wang, 2003; Peltzer & Malaka, 2001; Rfnsson, Jonsson & Windle, 2006; Tewksbury, Higgins, & Mustaine, 2008; Wood, Sher, & Bartholow, 2002), have identified many stressors and significant relationships between substance use during adolescence and young adulthood. It is also a fact that almost all cultures condone some use of alcohol in different situations, among them rituals that bear social and/ or religious significance (Craig, 2004). Although alcohol use has been associated with certain age-linked rites of passage such as important social events, celebrations and ceremonies (Kinney, 2000; Peltzer & Malaka, 2001), the culture of use has changed tremendously over the past several decades. As a result, adolescents and young adults live within a culture that has easy access to licit and illicit substances. Alcohol use does not occur within familial, social, and religious circumstances only but it is also found at different levels of the school system and work places with increased risk of misuse and abuse. With the loss of cultural rituals and traditions, substance use, particularly alcohol use among adolescents and young adults, continues to be excessive.

Despite a growing body of research and media attention on alcohol use and abuse during college years in the Western countries, very few studies have been done among college and university students in the African continent and very little has been done in Botswana. Alao, Forcheh, Roy and Tidimane, (2004) examined alcohol use and abuse among students at the University of Botswana. They reported a high percentage (75%) of alcohol use among the students. They also reported adverse outcomes associated with campus alcohol use, among them sleep disturbance, criminal behavior, physical abuse and other disorderly behaviors, academic problems, sexual abuse and sexual assault. Only 19.9% of the participants reported low daily alcohol consumption (3-4 units in males & 2-3 units in females) and 10.3% reported drinking heavily though infrequently (binge drinkers). The study further showed that more males (17.9%) than females (8.2%) reported

more alcohol use and more alcohol-related problems that included interpersonal relations, interaction with the legal system and health problems.

Another study by Nkowane, Rocha-Silva, Saxena, Mbatia, Ndubani and Wier-Smith (2004) investigated psychoactive substance use among young people in South Africa, Tanzania and Zambia (age 10-21). The sample for the study was drawn from both rural and urban populations and it included participants from a college, a mental health center, and a human services research council. The findings of the study indicated the highest use of alcohol among the young people in South Africa (88%), followed by Zambia (47%) and Tanzania (18%). The percentages of use within the last thirty days and the last year were also highest for South Africa (38% & 69%), followed by Zambia (19% & 34%) and Tanzania 15% & 15%). In contrast to the previous findings by Alao et al. (2004), Nkowane et al. (2004) reported the youngest age of the first alcohol consumption as 10 years. Studies from the South African and Zambian samples reported the first alcohol consumption age range from 10 to 14 years, which was accounted for by 37% of the South African sample and 47% of the Zambian sample. On the other hand, the study further reported that some of their participants started alcohol use at an age range from 15 to 21 years. In this age range, the South African sample indicated 43% followed by 34% of the Zambian sample.

Gender differences seem to be important also in the use of alcohol. According to Kinney (2000), younger women represent a growing percentage of drinkers, including those with alcohol problems and those with alcohol dependence. She found that, although there was a greater number of abstainers among older women in the general population, the proportion of younger women drinkers in the population was beginning to equal that of men. She attributed the changes in women's use of alcohol to the changes in the society. The older women (35 years and older) grew up during the time when women's drinking was less socially acceptable and far less prevalent. She reported higher percentages (72.7% and 73.3%) of users among the younger women (18-25 years & 26-34 years respectively) compared to only 35.6% among women 35 years and older. The younger women (56%) had started drinking before age 16, whereas only 14% of the older women had begun drinking by that age.

The level or year of study is reported by some studies to be significant in the use of alcohol. Some earlier studies in Prendergast (1994) found a relationship between college alcohol use and year of study. They concluded that the first year in college was a time of particularly high risk for beginning substance use or for shifting to higher levels of use. The studies also found that first and second year students who reported not drinking in high school were more likely to begin drinking if they were members of a fraternity or sorority. The results indicated further that although senior students drank as often as the juniors, the amount they drank was less.

Research findings have also consistently shown that students who develop drinking problems are more likely to report fewer coping skills, lower self-esteem, fewer ties to conservative campus life, and a perception of themselves as being under more stress than others. Studies (; Mora-Rios & Natera, 2001; Unger, 2001) indicate that the use of alcohol as a tension reducer increases aggressive behavior and other problems. They cited alcohol-related deaths, criminal behavior, health and psychological problems as prevalent among students whose drinking was found to be hazardous; a pattern of alcohol consumption that increases the risk of harmful consequences for the user or the other people in his/her environment. Unger, (2001) has also reported a strong correlation between perceived stress, stressful life events and alcohol use. He indicated further that students were more affected by stressors related directly to their studies such as academic pressure, the amount of material to learn, studying for examinations, examinations and examination results. Additionally, social-related factors such as financial problems, lack of time for family and friends were also identified as stressors.

Historically, alcohol use has always been related to some kind of stress management. Sayette (1999) observed that since ancient times, there has been a complex relationship between alcohol consumption and stress. He cited examples from Alcaeus, the Greek lyric poet, and Shakespeare, who both wrote about "mixing plenty of wine and drinking it to bury all unkindness" (p. 254). Researchers have argued consistently that alcohol's anticipated stress-relieving effect is a primary motivation for many people to consume alcohol, despite the often harmful consequences of drinking. The concept that alcohol could calm the nerves continues to be widely held across cultures.

Purpose of the study

The purpose of the present study was to examine the possible relationship between stress and alcohol use among college students in a three- year college in Botswana. Since no study has been done with the college sample in Botswana, the researcher chose to use a college as opposed to university in order to assess differences in the use of alcohol between college and university students. The findings may help inform policy makers and other stakeholders on specific interventions for each group. Thus, the study sought to determine whether stress is an underlying factor contributing to excessive use of alcohol in a college population

Research Questions

Specific research questions addressed in this study were: (a) Do college students drink alcohol? (b) Do they have stress? (c) Is there any association between the amount and frequency of drinking and the level of stress? (d) Are there any gender differences in alcohol consumption? (e) Are there any differences in alcohol use and stress level according to year of study? (f) Are there any differences in alcohol use according to subject major?

II. Method

This study utilized a correlational design to determine if there is any relationship and the strength of the relationship between college students' stress and their drinking of alcohol. Three scales were administered to the participants to gather their demographic information, assess their stress level and their alcohol use, respectively.

Participants

The sample consisted of 221 participants (N= 221); n=113 males, (51 %) and n= 108 females (50%) with an age range of 19 to 36 years and a mean age of 23.50 years. All the three college levels of study were represented in the sample with the distribution as follows: freshman (n = 100, 45.2%), juniors (n = 41, 18.6%) and seniors (n = 80, 36.2%).

Procedures

The researcher travelled to the college and met with the identified staff member and research assistants two weeks before the beginning of data collection. The purpose of this visit was to discuss logistics around the study and to train the research assistants on the scales that would be used in the collection of data as well as ethical issues including consent forms. The participants were conveniently selected based on their availability and interest in participating in the study. The administration time was planned around the students' normal class time. The researcher was available throughout data collection to monitor the process and to ensure that ethical issues of the research such as explanation of the purpose of the study, the consent form, the intended use of the findings including dissemination, and the necessary steps that the researcher will take to maintain the participants' confidentiality were explained well. The participants who were willing to participate in the study signed the consent form before the research packet was distributed to them. All the students who participated in the study were given a pen and an A4 note book as a token of appreciation.

Measures

There were three scales used in this study and they were put in three sections in the study packet. In section A was Young Adult Self-Report (Achenbach, 1997), in section B was the Undergraduate Stress Questionnaire (USQ), (Crandall, Preisler, and Aussprung, 1992), and in section C was the Alcohol Use Disorder Identification Test (AUDIT), (Babor, Higgins-Biddle, Saunders and Monteiro, 2001).

Young Adult Self-Report (Achenbach, 1997) was used to collect demographic information. In addition to variables such as age, gender, and education, this scale also includes questions about relationships with friends and other students, which gives the researcher some ideas about the participants' social support system.

Undergraduate Stress Questionnaire (USQ) (Crandall, Preisler, and Aussprung, 1992) was used assess stress. Undergraduate Stress Questionnaire (USQ) is an 82 item scale that has been used widely among college students and it has been reported to be a reliable and valid measure of stress in college population in different countries, with a Cronbach alpha coefficient of .96 (Fabricatore, Handal, and Rubio, 2004). The stress questionnaire is on a Likert type response format, which asks the respondents to indicate, on a 4-point scale (0 = not stressful, 1 = slightly stressful, 2 = stressful, 3 = most stressful) item stressors that had affected them during the past 12 months.

Alcohol Use Disorder Identification Test (AUDIT), (Babor, Higgins-Biddle, Saunders, and Monteiro, 2001) was used to measure alcohol use. AUDIT is an instrument that has been used successfully to screen for excessive alcohol consumption and related risks in different populations including college students, primary care patients, drug users and the unemployed, the elderly and persons of low socio-economic status in both developed and developing countries. AUDIT's self-report version has 10-items that are rated on a five point Likert type response format, 0 to 4 according to the responses that are suitable for each one of the ten items. The items sort into three domains: hazardous alcohol use, dependence symptoms, and harmful alcohol use. AUDIT is reported to have a high reliability ($r = .86$) and it is also reported as the best screening instrument for a range of alcohol problems Babor, Higgins-Biddle, Saunders, and Monteiro(2001). **Analysis**

Descriptive statistics were run on all the variables in this study. The descriptive statistics included frequencies and percentage tables. Multiple regressions and Chi-square analyses were used to examine relationships between the variables as well as the instruments used. T-tests and ANOVA were run to determine group differences among gender, age, years of study and subject major.

III. Results

The final sample of college students consisted of a total of 221 participants, of whom 108 (49%) were females and 113 (51%) were males. Almost half (n = 100, 45%) of the sample were in their first year of study while the rest were in their second (n=41, 18.6%) and third (n = 80, 36.2%) years of study. Nine different subject majors (Art, Design & Technology, English, Mathematics, Moral Education, Religious Education, Science, Setswana and Social Studies) were represented in this sample. When asked how many “close friends” they had, a little over one-third of the students (n = 82, 37.1%) stated that they had four or more, while 91 students (41.2%) stated that they had three close friends. About 15% (n = 33) and 7% (n = 15) of the students said that they had one or no close friend, respectively.

On the Undergraduate Stress Questionnaire (USQ, with a score range = 0 to 249), the students’ average stress total score was 115.61 with a standard deviation of 35.5. The scores ranged from 24 to 194 with a median of 119. The skewness value of 0.09 indicates that this variable was normally distributed. On the Alcohol Use Disorder Identification Test (AUDIT: possible range = 0-40), the students scored 7.02 on average with a standard deviation of 9.08. Although the score ranged from 0 to 40, a median value of 3.00 indicates that most of the students scored on the lower range of the scale. In fact, 92 students (41.6%) scored zero on this scale indicating that although they may be using alcohol, their use did not fall within the category of harmful or hazardous. The skewness value 1.39 suggests a moderate positive skew, indicating again, that an overwhelming majority of the students scored on the lower end of this scale. The findings indicate further that students who experience high levels of stress are *no* more likely to engage in heavy or hazardous drinking than the students who do not experience such high levels of stress ($\chi^2 = 1.08$, $df = 2$, $p = 0.58$).

A total score of 8 or more on the AUDIT questionnaire indicates hazardous drinking. The findings indicate that the stress total score does not predict the extent to which students engage in hazardous drinking ($F = .88$, $p = 0.35$). The regression equation predicted a 0.4% of the variance on hazardous drinking, further confirming the absence of relationship between stress and hazardous drinking in this sample, (Table 1, Model 1). According to the findings, the amount of stress does not predict how frequently students drink ($F = .02$, $p = 0.88$, $R^2 = .001$). (Table 1, Model 2). However, maladaptive coping was found to predict alcohol use ($F = 13.45$, $p = <.001$, $R^2 = .06$). (Table 1, Model 3). The results on stress, frequency of drinking, and total alcohol use are displayed in table 1 below.

Table 1: USQ, Hazardous drinking, Frequency of drinking AUDIT Total

<i>Model #</i>	<i>Model</i>	<i>R Square</i>	<i>F</i>	<i>p.</i>	<i>B</i>	<i>Beta</i>
	USQ predicting Hazardous Drinking	.004	.88	.35	.002	.06
2	Frequency of drinking and stress	.001	.02	.88	.001	.01
3	Maladaptive Coping predicting AUD Total	.06	13.45	<.001*	.33	.24

Gender differences in the consumption of alcohol were found to be important but no so on the amount of stress experienced. The findings show that on average, males engaged in more alcohol consumption than females ($F = 30.63$, $p < .001$). However, males and females did not differ significantly in terms of the amount of stress ($F = 1.51$, $p = .221$). The results on gender differences on both stress and alcohol use are displayed in table 2 below.

Table 2: Gender Difference on Total USQ and AUDIT Total

		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>
USQ	Between Groups	1889.592	1	1889.592	1.505	.221
	Within Groups	274884.942	219	1255.182		
	Total	276774.534	220			
AUD Total	Between Groups	2223.955	1	2223.955	30.634	.000*
	Within Groups	15898.932	219	72.598		
	Total	18122.887	220			

There was no significant difference between subjects majors and the total alcohol use ($F = 1.65$, $p = .11$) or on stress total score ($F = 1.06$, $p = .39$). Students from different years of study did not differ significantly on

stress total score ($F = 1.25$, $p = .29$), or alcohol use ($F = 1.46$, $p = .24$).

Supplemental Analyses

Although no significant relationship between stress and alcohol consumption was observed in the general sample, this relationship was further explored among specific groups of participants within the sample for several reasons. First, the general sample reported very low alcohol use with almost half the participants reporting abstinence from alcohol. It was possible that a large group of participants who did not use alcohol disguised a possible association between stress and alcohol use. Therefore, a supplemental analysis was conducted using only the participants who had reported some alcohol use.

After excluding the participants who reported no alcohol use (i.e. AUDIT score = 0), 129 participants remained, 51 (39.5% females and 78 (60.5% males). The findings indicate that even among the participants who reported some alcohol use, there was no significant relationship between stress and alcohol use ($F = 0.932$, $p = .34$). Stress levels explained only 0.7% of the variance in alcohol use in this smaller sample. A large gender difference in the pattern of alcohol use was noted in the previous analysis, suggesting that there may be a significant gender difference in the pattern of association between stress and alcohol use. Thus, the regression equation for the relationship between stress and alcohol use was run separately for male and female participants. A marginally significant relationship was observed for males only, meaning that for male students, stress levels predicted overall alcohol consumption at a near-significant degree ($F = 3.18$, $p = 0.08$). Stress level predicted approximately 3% of the variance on alcohol consumption. For female participants, no significant association was found ($F = 1.51$, $p = .22$),

IV. Discussion

Similar to the earlier studies that reported a range of percentages of use according to the sample studied, the current study found that 129 participants (51, 39.5% females and 78, 60.5% males) admitted to using alcohol. Although the total percentage (58.4%) of alcohol users seems to be lower than originally hypothesized, it is within the range of percentages (40% - 93%) reported by other researchers (Alao et al., 2004; Nkowane et al., 2004; 2001; O'Hare, 2003; Mora-Rios & Natera, 2001; Sher et al., 2001;) One of the factors could be that, similar to most professional colleges in Botswana, there is a zero tolerance of alcohol use at the College and those who are caught using are likely to face punitive measures. A large number of the participants 92 (41.6%) indicated that they did not use alcohol at all. Their responses could have been out of fear of reprisal. There also could have been trust issues among the participants, particularly because two of their instructors were involved as research assistants.

Botswana is a communal society in which individuals generally look out for each other. There is also more social interest and social support among the people, particularly in rural areas where the traditional Setswana values and mores are the fulcrum of life. Thus, given that the study was done in a rural area, the participants may have responded in the way that they thought they were expected to respond. It is also important to note that alcohol use is likely to be lower in a rural area than in an urban area where the traditional systems have been eroded and replaced by the Western or modern way of life. However, as the country continues to develop, people in urban areas have moved away from the traditional way of life. Individuals in urban areas seem to be more vulnerable than their rural counterparts. For example, they typically tend to live outside a constructive social network, they live away from parental guidance and they also live in environments where substance use is the norm. A study by Alao et al. (2004) found that 75% of the University of Botswana students, which is situated in an urban area, reported alcohol use compared to only 58.4% of the current study.

The current study's findings are also consistent with the findings of the previous studies that indicated gender differences in alcohol use. Several studies (Peltzer & Malaka, 2001; Alao et al., 2004; Nkowane et al., 2004; Kinney, 2000; Haberman, 2001; O'Hare, 2003; Dunn & Wang, 2003; Mora-Rios & Natera, 2001; Kairouz & Adlaf, 2003; Sutherland & Shepherd, 2001) have also reported more alcohol use among male students compared to female students.

Although the participants of the study admitted to moderate stress, the results did not indicate a positive relationship between stress and hazardous drinking, or between the amount of stress and frequency of drinking in the general sample. The results further failed to show any positive relationship between high stress level and high alcohol use. However, the study found that males' high stress level was positively related to higher alcohol consumption. Thus, the findings of the current study are consistent with the results of the previous studies (Armeli et al., 2000; Britton, 2004; Carney et al., 2000; Russell et al., 2001;) that showed a strong positive relationship between stress and alcohol use, particularly among males.

Maladaptive coping was found to be positively related to frequent and hazardous drinking. The findings of the current study are consistent with earlier findings by Britton, (2004) that indicated a strong association between deficits in adaptive coping strategies and maladaptive avoidance strategies that included the

use of alcohol. Similarly, other studies reported that college students who used alcohol frequently were more likely to report fewer effective coping skills.

Limitations

The fact that the sample came from a homogenous college may have affected the findings particularly because professional colleges in Botswana operate under more stringent set of rules than ordinary colleges or universities, thus limiting generalizability of the findings. The majority of the participants reported lower scores on alcohol use. Botswana students, particularly in rural areas, are more likely to report less stress because of the social support that they may get from their communities. Although this does not suggest that they may be less stressed than their counterparts in urban areas, it may indicate that a constructive social network can act as a buffer against certain problems and/or disorders. The number of friends should not only be reported but it should be investigated for impact on the use of alcohol. Future studies should also look into the impact of family history of alcohol use, and age of first drink since most of the studies reported their significant relationship with college alcohol use and stress.

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