Substance Use, Emerging Substances and Poly Drug Use among Undergraduate Students in Universities in Kenya

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Abstract

There is an increase in the use of substances and the peak levels of substance use are seen among young people aged between 18-25. Substance use presents a barrier to learning, it impairs cognitive ability and distorts judgment. There is limited information on the magnitude of substance use and a countrywide study has not been conducted to determine the extent of substance use, emerging substances and poly drug use among undergraduate students in Kenya. The purpose of this study was to determine the extent of substance use, emerging substances and poly drug use among the undergraduates in Kenya. A descriptive cross-sectional survey design was used for this study. The target population was 451,081 undergraduate students, where 390,456 were in public and 60,625 in private chartered universities. The sample size was 1,500 participants selected from seven public and five private universities, from ten counties across the country. A World Health Organization (WHO) questionnaire - Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was used to determine the extent of substance use, poly drug use and emerging substances among the undergraduate students. The key substances were alcohol, tobacco, cannabis and shisha among others. The findings revealed prevalence of lifetime substance use of 48.6% and the prevalence of current use of 37.9%. Public universities (M=.48, SD= .50) had higher prevalence of current use than private universities (M=.26, SD= .43) with $t(1435) = 8.94$, $p<.05$. Alcohol was the most commonly used substance and shisha was an emerging substance. Poly drug use was reported at 162 (11.3%) among the current users. The prevalence of substance use is high. There is a need for universities to develop and implement interventions for the emerging substances and poly drug use to mitigate the potential risk of developing substance use disorders.

Keywords: Substance use, lifetime use, current use, emerging substances, poly drug use, undergraduate students.

Introduction

The World Drug Report (2018) indicated that substance use has been increasing globally and the estimated total number of people who use substances have increased from 46% in 2008 to 52% in 2014 and 56% in 2016. The report also indicated that substance use and related health consequences were highest among the young people aged 18-25 years old. This has led to an increase in the number of people suffering from substance use disorders. The report further revealed that, increased use of substances led to 60% increase in deaths caused by substance use disorder. Some of the effects of substance use on university students include impaired cognitive ability, distorted judgment, poor academic performance, involvement in crime and risky behavior among university students.

Worldwide, studies have been done on the prevalence of substance use in universities (Arbor-Nicopoulos, Kwan, Lowe, Taman & Faulkner, 2010; Carter, Brandon, & Goldman, 2010; Akmartov, Mikolajczyk, Meier & Kramer, 2011; Chiauzzi, Donovan, Black, Cooney, Buechner

& Wood, 2011). The studies revealed a high prevalence of substance use, especially alcohol use. For instance in Europe, one-quarter of youth aged between 18-21 years reported having consumed an illicit drug in their lifetime. A survey conducted in Germany among university students revealed a high prevalence of alcohol use. A majority 80% of the students displayed heavy drinking, meaning that they would consume five alcoholic drinks on any one occasion. Students who displayed harmful drinking were at 20%, this means that alcohol consumption had affected physical and mental health of the students. A comparative analysis of alcohol consumption patterns among global university students revealed that alcohol consumption was higher among university students compared to the general population (Tse, 2011). A review conducted by Carter et al. (2010) indicated that a university student drank more frequently than non-university peers did in the United State of America.

In Africa, studies on substance use in Nigeria, Uganda, Ethiopia and South Africa, revealed high prevalence of substance use among the university students. In South Africa, a study conducted by Steyl and Phillips (2011) indicated that substance use was high among university students, with 54% of the respondents having used alcohol in the previous 30 days, 27.5% having smoked tobacco and 17.0% having used other substances. In Ethiopia for instance, prevalence of at least one substance was 62% among university students (Tesfaye, Derese & Hambisa, 2014). Another study conducted in Nigeria revealed that prevalence for mild stimulants among university students was 46.1% and for alcohol was 39.7% (Majanjuola, Abiodun & Sajo, 2014).

In Kenya, studies reveal high prevalence of substance use among university students. For instance, National Authority for the Campaign against Alcohol and Drug Abuse (NACADA, 2010) found that 60% of the youth had used alcohol and about half had developed alcohol use disorder. The rapid situation assessments by NACADA (2012) also revealed that the youth aged 15 to 24 years old had the highest prevalence of substance use. The prevalence of those who

had used alcohol was 35.6%, tobacco was 37.1%, khat was 30.8%. The highest prevalence was cannabis at 44.4%. These substances are the gateway to other hard substances such as cocaine and heroin. Sometimes the young people mix substances, which can be detrimental to their health (Martin, 2008). According to Atwoli et al. (2011), the lifetime substance prevalence among students in universities in Eldoret was at 69.8%. This study reported prevalence of specific substances such as alcohol at 51.9%, cigarette at 42.8%, cannabis at 2% and cocaine at 0.6. In addition, Hassan (2010) reported an alcohol prevalence of 63.2% in the University of Nairobi. A similar study conducted at Kenyatta University on prevalence of lifetime use of substances revealed that alcohol stood at 92.1%, cannabis at 62.9%, tobacco at 51.5%, khat at 51.9%, and cocaine at 3.5% (Tumuti, Wangeri, Waweru, & Ronoh, 2014). Another study conducted in a private Christian University in Kenya revealed that the students who had consumed alcohol were at different levels of risk, 39.3% of the students were at high risk of alcohol use; 47% were at a moderate risk of alcohol use while 15.0% were at a low risk of alcohol use (Ndegwa, Munene & Oladipo, 2017).

A different study conducted on alcohol use among student- athletes at the University of Nairobi revealed that 50% of athletes were binge drinkers (more than 5 beers in a sitting). Some of the reasons given for the excessive drinking of alcohol were relaxation at 82%, followed by overcoming shyness and tension at 72.6%, and managing boredom at 66.4%. Some 57.5% consumed alcohol as a result of peer pressure (Rintaungu, Ng'etich & Kamande, 2012). Another study conducted by Magu, Mutugi, Ndahi, and Wanzala, (2013) among public university students in Kenya revealed that about 69.5% of students had used tobacco at some point, while 17.1% were current users.

Several studies show that most students start using substances way before joining the university, the studies demonstrate an increase in substance use among secondary school students (Ngesu, Ndiki & Masese, 2008; Oteyo & Kariuki, 2009; King'endo, 2011 Oteyo, Kariuki & Mwenje,

2013). Despite the effort made by NACADA, the Ministry of Education, institutions of higher learning and other groups to reduce the level of substance use by creating awareness and building the capacity of stakeholders, the prevalence rate of substance use is on the increase in Kenya (NACADA, 2012). Institutions of higher learning may be a platform for both protective and risk factors; such institutions have an opportunity to influence students' experiences either positively or negatively in relation to healthy behavior.

The studies discussed above, were based on findings from one university or universities in one county or region. Despite continued campaigns and counseling interventions offered by the universities against substance use, there is still a high prevalence of substance use thus revealing a gap in prevention strategies. There is a need to determine the extent of substance use, emerging substances and poly drug use among the undergraduate students in Kenya.

Methodology

The study employed a descriptive cross sectional survey design. The study was conducted in twelve chartered public and private universities selected from ten counties across the country, which were selected from urban, suburban and rural environments in five selected regions of Kenya. These regions were Coast, Western, Central, Rift Valley, and Eastern regions. The names of the universities were withheld because of the sensitivity of the subject area of study, therefore, PUB stood for public universities and PRI stood for private universities. The private universities were selected on the basis of sponsorship, that is, religious-sponsored institutions and the non- religious-sponsored institutions of higher learning in the five regions of Kenya. The seven public universities thus included University PUB A, PUB B, PUB C, PUB D PUB E PUB F and PUB G and five private universities thus included PRI A, PRI B, PRI C, PRI D and PRI E.

Population and sample size

The target population was 451,081 undergraduate students, where 390,456 were in chartered public universities and 60,625 in chartered private universities (CUE, 2016). Multi-stage sampling techniques were used to select participating universities. The first stage was the use of stratified sampling to categorize the public and private universities. The second stage was purposive sampling to facilitate the selection of the five regions in Kenya and the 12 universities from the ten counties in the five regions in Kenya. Purposive sampling was used in the selection of the main campuses. Proportionate sampling was used to determine the number of participating universities. From the accessible population of 145,906 students in public universities and 32,045 in private universities; the total sample size of respondents was 1500 students. A sample size of 821 in public universities and 679 in private universities.

Data collection procedure

The researcher obtained a research permit from the National Commission for Science, Technology, and Innovations (NACOSTI); the reference number NACOSTI/P/17/60109/16398. The researcher also obtained ethical clearance from an Ethical Review Board in the country and permission from the Vice Chancellors of each university selected for the study. The researcher met with the Director of Research of the selected universities and was introduced to the Dean of Student Affairs who in turn introduced the researcher to the university student counsellors and the students. The university registrar provided a timetable showing the classes available on that particular day and the researcher would select classes randomly from first year to fourth year. All students who were willing to participate in the study were given the questionnaires to fill. Participation in the study was voluntary and anonymous. The informed consent was obtained from all participants and participants were assured of confidentiality. The data was collected from September 2017 to April 2018.

Measuring the extent of substance use among university students

In order to gather data on lifetime, current use, poly drug use and emerging substance, a World Health Organization (WHO) questionnaire - Alcohol, Smoking, and Substance Involvement

Screening Test (ASSIST) was included (WHO, 2012). The ASSIST was validated in several countries including Kenya where the internal consistency of the different domains ranged between 0.77 and 0.94 (Humenuik et al. 2010; Onifade et al. 2014). The ASSIST measured the prevalence of current substance use, lifetime use, emerging substances and poly drug use. Lifetime use referred to the use of any of the substances at least once in a respondent's lifetime. The questionnaire consists of eight questions on lifetime use of the substance, substance dependency syndromes, and substance-related problems. Poly drug use was measured by identifying the number of substances a student had ever used or had used in the past three months.

The data collected from the questionnaire was analysed using descriptive statistics that is frequencies, percentages, means and standard deviations. The ASSIST scores were used to identify non-users, lifetime users, current users and poly drug users. For inferential statistics, Student t-test was used to test whether there were significant differences between the two means of prevalence rate derived from public and private universities. Chi square analysis was performed to assess whether an association existed between the demographic characteristics and substance use, prevalence of poly drug use among students and the type of university.

Results

Demographic Characteristics of the Respondents

Out of 1500 questionnaires administered, 1438 questionnaires were completed, 781 from public universities and 657 from private universities giving a response rate of 95.8%. Studies have shown that response rate of 70% and above is acceptable (Babbie, 2010; Nulty, 2014). Male respondents were 769 (53.5%) and female respondents were 653 (45.4%). The respondents age ranged from 17-33 years, with the majority 1282 (89.2%) being in the age category of 17-24 years. The second year students were slightly more 420 (29.2%), followed by first years 376 (26.1%), third years 300 (20.9%) and fourth years were 357 (24.9%). Most of the respondents

593 (41.4%) had modest pocket money of 20 USD and below. Respondents who indicated that their monthly pocket money was 21 to 40 USD were 382 (26.7%); those who had monthly pocket money ranging from 41 to 60 USD were 180 (12.6%) as shown in Table1.

The study compared the following demographic characteristics against the use of substance among university students. This included; year of study, religious practice, family setting and amount of pocket money. The results revealed that 264 (40.4%) female and 431 (56.0%) male students had ever used substances in their lifetime. While those who had used substances in the past three months were 198 (30.3%) female and 342 (44.5%) male. The study revealed that substance use increased with the level of study. The respondents who indicated that they had used substances in the past three months were as follows; first years 30.9%, second year 32.6%, third year 38.5% and fourth year 49.8%. This increase was statistically significant X^2 (5, N = 1430) =44.689, p<.05). The study revealed a significant relationship between religious practice and substance use X^2 (4, N = 1380) =34.803, p<.05). A majority 721 (50.2%) of the students practiced their religion of preference once a week, followed by those who practiced their religion daily 509 (35.4%).

Family setting can be a determining factor of substance use among students. The findings revealed that the majority of the respondents 1007 (70.1%) came from homes that had both parents. The results revealed a significant relationship between the type of family setting and the use of substance among university students X^2 (5, N = 1414) = 14.335, p<.05). Pocket money can be a factor that contributes to substance use among students. The results revealed that the more the pocket money, the higher the substance use. About 28.5% of students who had pocket money of 20 USD and below used substances in the past three months, compared to 42.7% of students with pocket money of 21 to 40 USD. Those who indicated that they had pocket money of 41 to 60 USD, 44.3% had used substances in the past three months, while those who had pocket money of 61 and above, 48.9% of the respondents had used substances. This shows an increment on

the percentage of students using substances in relation to increment in pocket money for current use. This increase was statistically significant X^2 (3, N = 1347) =38.575, p<.05).

The extent of prevalence of substance use was measured by use of three indicators; the frequencies of lifetime use, current use and polydrug use. The overall lifetime prevalence of substance use was at 699 (48.6%), in public universities 427 (54.7%) and in private universities 272 (41.4%) had used at least one substance in their lifetime. Figure 1 shows the findings of the lifetime prevalence of any of the substances. There was a significant difference in mean of public (M=.55, SD=.498) which was higher than private (M=.41, SD=.493) t (1435) p<.05.

The lifetime prevalence of specific substances was; alcohol 621(43.2%), Cannabis 204(14.2%), tobacco 187 (13%), shisha 256 (17.8%), kuber (chewed tobacco) 62(4.3%), cocaine (2.7%) amphetamine24(1.7%), inhalants 14(1.0%), sedatives 71(4.9%), hallucinogens 12(0.8%), opioids 19(1.3%), khat (Catha edulisforsk) 165(11.5%) and muguka (cathaedulis vahi) 116 (8.1%) as shown in Table 2.

Alcohol was the most commonly used substance, followed by shisha, then cannabis, and tobacco. One of the emerging substances shisha 256 (17.8%) was among the commonly used substances. Shisha use had more lifetime users than tobacco 187(13%), this would mean that shisha use is on the increase among the undergraduate students.

The overall prevalence of current use of substances was 545 (37.9%). Public universities had higher current prevalence of substance use 376 (48.1%) than private universities 167 (25.7%). This means that close to half of the respondents in public universities used substances more frequently than the private universities. There was a significant difference in mean comparison of public (M=.48, SD=.500) which was higher than private (M=.26, SD=.437) t (1435) = 8.936, p<.05 as shown in Table3.

The respondents who had used alcohol, tobacco and cannabis in the past three months before the study in both public and private universities were as follows; alcohol 440 (30.7%), Cannabis 255 (18.1%) and tobacco 200 (14.2%). A comparison of public and private universities revealed that public universities had higher prevalence of alcohol, cannabis and tobacco use than private universities. The difference was statistically significant. For public universities those who had used alcohol were 289 (37.2%) while in private universities 151 (23.0%). For cannabis the prevalence in public universities was 207 (27.4%) and 48 (7.3%) in public universities, while tobacco was 173(23.1%) in public universities and in private universities the prevalence was27 (4.1%). A comparison of prevalence of current use of substances in public and private universities was performed using the t-test.

Table 4 revealed that for alcohol prevalence, there was a significant difference in mean of public (M=.321, SD=.467) which was higher than private (M=.222, SD=.416) t(782) = 19.208, p<.05. For cannabis, the mean of public (M=.088, SD=.284) was significantly higher than private (M=.031, SD=.173) t(782) = 8.693, p<.05. Tobacco, the mean of public (M=.043, SD=.204) was significantly higher than private (M=.026, SD=.159) t(782) = 5.958, p<.05. Lastly, for Shisha, the mean of public (M=.082, SD=.274) was significantly higher than private (M=.044, SD=.206) t(782)= 8.343, p<.05.

There were cases of poly drug use, where respondents indicated that they had used more than one substance in their lifetime or in the past three months. Table 4 shows the frequency of non-users, single substance users, and poly drug users in both public and private universities. The prevalence of poly drug use for lifetime users was 424 (29.5%) while the prevalence of single substance users was 278 (19.3%) therefore; poly drug users were more than those who used one substance. However, of the current users, the poly drug users were 162 (11.3%) compared to291 (20.3%) who were single users. This shows reduction of poly drug prevalence from lifetime to current use. A comparison of poly drug use in public and private universities revealed that in public universities 120 (8.2%) of the respondents had used more than one substance in the past three months while 42 (2.9%) of those in private

universities had used more than one substance. When the Chi-square was calculated, there was a significant relationship found between the prevalence of poly drug use among students and the type of university X^2 (2, N = 1437) = 24.278 p<.05). The most common combination of poly drugs use was the use of alcohol with cannabis, alcohol, tobacco and cannabis, alcohol, *khat* and *muguka* or alcohol, shisha and cannabis.

Discussion

The study compared the following demographic characteristics against the use of substance among university students. This included; year of study, religious practice, family setting and amount of pocket money. The results revealed that 264 (40.4%) female and 431 (56.0%) male students had ever used substances in their lifetime. While those who had used substances in the past three months were 198(30.3%) female and 342(44.5%) male. The results are in line with global survey conducted by WHO (2017) and UNODC (2017), which revealed that males are generally at higher risk of using substances than females. Among university students, studies have shown higher prevalence of substance use among male students (Adeoti et al., 2010; Atwoli et al., 2011; Osman et al., 2016). However, a study conducted among the undergraduate students the University of Uyo in Nigeria showed the contrary, more females (37.7%) than males (18.2%) had used substances in (Johnson et al., 2017).

The study revealed that substance use increased with the level of study. The respondents who indicated that they had used substances in the past three months were as follows; first years 30.9%, second year 32.6%, third year 38.5% and fourth year 49.8%. This increase was statistically significant X^2 (5, N = 1430) = 44.689, p<.05). This would mean that the students in third and fourth year are familiar with the university environment and surroundings; they can easily use substances without being found out by university administration. Some studies indicate that students in third and fourth year are likely to use more substances than other years of study: Magu, et.al (2013); Tesfaye et al. (2014); Bago, (2017). For example, a study conducted among

students of Hawassa revealed that; students in third year were 3.74 times and those in fourth year were 6.02 times higher odds of cigarette smoking as compared with those first year students Bago, (2017). Therefore, understanding the year of study that students use substances may help in coming up with interventions that address issues at every level of study.

The study revealed a significant relationship between religious practice and substance use X2 (4, N = 1380) = 34.803, p<.05). Religious involvement and beliefs are part and parcel of the faith based universities in Kenya. Therefore, students are more likely to participate in such activities and may not engage in the use of substances. Religion has previously been indicated as a factor that protects university students from using substances. A study conducted by the National Survey on Drug Use and Health [NSDUH], (2013) indicated that 29.8% of youths reported that they had attended religious services 25 or more times in the past year. The rate of substance use was lower for those who were involved in religious activities. According to Thompson (2017), encouraging religious involvement of students reduces alcohol use in universities.

The results revealed a significant relationship between the type of family setting and the use of substance among university students X^2 (5, N = 1414) = 14.335, p<.05). Studies have shown that substance use is likely to increase in the case of parental absence because of either divorce, separation or death. Absence of a parent or both parents can be a cause of emotional distress and can lead to substance use (Hemovich, 2009; Gorgulu et al 2016).

The results revealed that the more the pocket money, the higher the substance use. There was an increase in the percentage of students using substances in relation to increment in pocket money for current use. This increase was statistically significant X2 (3, N = 1347) = 38.575, p<.05). Several studies have shown that a lot of pocket money increases the chances of using substances among universities (Tesfaye et al. 2011; Osman, 2016).

The overall lifetime prevalence of any substance was 699 (48.6%). While the overall current use prevalence of any of the substances used in the past three months was 545 (37.9%). This means that close to half of the respondents in public universities had used substances more frequently in the past three months than the private universities. There was a significant difference between prevalence of substance use in public and private universities for students. Most of the private universities in this study were faith-based institutions; such institutions mostly admit students who are willing to adhere to their rules and regulations. Most of the faith-based universities have an emphasis on religious activities and student involvement is encouraged. In addition, most of the private universities are very strict and vigilant in checking substance use among students. Therefore, such institutions, especially the faith- based universities are likely to attract students who would comply with non-use of substance rule (Miller, 2013).

High prevalence of substance use among students in public universities has been cited in several studies, including (Hassan et al., 2010; Atwoli et al., 2011; Magu et al 2013, & Tumuti et al., 2014). The studies revealed that students in public universities had a higher prevalence of substance use, with alcohol being the most commonly used substance. However, a few studies conducted in private universities in Kenya revealed that there is high prevalence of substance use (Wachira, 2016; Ndegwa et al., 2017). These studies argue that students in private universities have higher economic status and can afford to purchase substances. Secondly, due to competitive market trends in regards to admission of students, private religious sponsored institutions admit all students irrespective of their backgrounds. The university environment has less supervision and restriction compared to a high school environment, thus students make the transition from restricted life monitored by parents and teachers to a more self-directed life influenced by the university environment (Osman et al., 2016).

The commonly used substances in lifetime and current use were; alcohol, shisha, cannabis and tobacco. This means that students' level of exposure to alcohol, shisha, cannabis and tobacco was high; these substances are cheap and readily available. According to WDR, 2018, alcohol, tobacco and cannabis are the most commonly used substances. Such substances also referred to as gateway substances, can lead to students use of harder substances like cocaine and heroin.

One of the emerging substances, shisha, at 256 (17.8%), was among the most commonly used substances, second only after alcohol. Shisha use had more lifetime users than tobacco 187(13%); this would mean that shisha use is on the increase among university students. Aslam (2014) indicates that shisha is more popular than cigarettes because people believe that it is less harmful and it is socially accepted. Studies conducted in the United States of America reported a high prevalence of shisha use in universities, ranging from 10% to 27%. For instance, a study conducted in two large public universities in the Midwest and on the West Coast of the USA revealed that the prevalence of lifetime use of shisha was 27.8% (Brockman, Pumper, Christakis, & Moreno, 2012). Another study conducted at the University of San Diego, revealed that the prevalence of shisha smoking among university students was 24.5%. The findings further revealed that shisha smoking was higher among university students compared to all adults, whose prevalence was 11.2% (Smith et al., 2011).

In Africa, a study conducted by Van der Merwe et al. (2013) in the University of Cape Town among Health Science students revealed a higher prevalence of lifetime use of shisha; those who had smoked shisha in their lifetime were 66% and the students who were currently smoking shisha were 18%. In Rwanda, a study conducted at Kigali University indicated that the prevalence of those who had ever smoked shisha was 26.1% and those that had smoked it in the last month (30 days) were at 20.8% (Omotehinwa et al., 2018). The study further revealed that students had poor knowledge about the effect of shisha on health; about 40% had a low level of knowledge about the effect of shisha and such students were significantly more likely to use shisha than those with adequate knowledge about shisha p <0.001. Shisha use is, therefore, on the increase

and there is a need to create awareness on its harmful effects.

Determining poly drug use is important because it reveals the prevalence, type of substances used and it shows the group of substances used together (Nkyi, 2015). Poly drug users were fewer than those who had used one substance in the past three months. However, studies show that poly drug use leads to development of health related problems (Martin, 2008). The results agree with the WDR (2018) findings. However, a study conducted among university students in Sudan revealed that students who had used a single substance were 45.7% and poly drug user were more 54.3% (Osman et al., 2016). In France, 8.9% of university students used poly drug almost daily in a month (Tavolacci et al., 2013). According to UNODC (2018), cases of poly drug use among college students, aged 18-29 were on the increase. The report revealed that alcohol was the most commonly used substance that would be consumed with at least one other substance.

The common poly drug use combinations were the use of tobacco with alcohol, cannabis and alcohol, cocaine and alcohol and tranquilizers and alcohol. Counselling interventions should consider strategies that target poly drug users.

Conclusion

The prevalence of substance use among students in both public and private universities in Kenya is high. This is both lifetime prevalence of substance use and current use. Poly drug users were more than students who used a single substance. Alcohol is the most commonly used substance because of its availability and affordability. *Shisha* is the second commonly used substance and it is an emerging substance. There is need for universities to use prevention strategies that will target the non-users who were the majority, therefore postponing early use of substances. There is need to develop and implement interventions that focus on poly drug users to mitigate the potential risk of developing substance use disorders.

Tables and Figures

**Table 1: Demographic characteristics (A) of the Respondents**

Variable	Public	Private	Overall
Year of study	n=781	n=657	n=1438
1st	213 (27.3)	163 (24.8)	376 (26.1)
2nd	177 (22.7)	243 (37)	420 (29.2)
3rd	160 (20.5)	140 (21.3)	300 (20.9)
4th	205 (26.2)	92 (14.5)	297(20.7)
5th	18 (2.3)	12 (1.8)	30 (2.1)
Age in years			
29-32	7 (0.9)	14 (2.1)	21 (1.5)
25-28	46 (5.9)	35 (5.3)	81 (5.6)
21-24	454 (58.3)	368 (56)	822(57.2)
17-20	242 (31.1)	218 (33.2)	460 (32)
Gender			
Female	335 (42.9)	318 (42.9)	653 (45.4)
Male	439 (56.2)	330 (50.2)	769 (53.5)
Marital status			
Divorced	10 (1.3)	16 (2.4)	26 (1.8)
Separated	25 (3.2)	11 (1.7)	36 (2.5)
Widowed	5 (0.6)	3 (0.5)	8 (0.6)
Married	17 (2.2)	11 (1.7)	28 (1.9)
Single	717 (91.9)	609 (92.7)	1326 (92.3)

Demographic characteristics (B) of the Respondents

Variable	Public n=781	Private n=657	Overall n=1438
Religious preference			
Hindu	10 (1.3)	11 (1.7)	21 (1.5)
Adventist	108 (14)	90 (13.7)	198 (13.8)
Muslim	18 (2.3)	32 (4.9)	50 (3.5)
Protestant	382 (49.4)	310 (47.2)	692 (48.4)
Catholic	234 (30.3)	198 (30.1)	432 (30.2)
Religious practice			
Once a day	255 (32.7)	254 (38.7)	509 (35.4)
Once a week	388 (49.8)	333 (50.7)	721 (50.2)
Once a month	52 (6.7)	29 (4.4)	81 (5.6)
Once a year	30 (3.9)	11 (1.7)	41 (2.9)
Family set up			
Living with both parents	540 (69.3)	467 (71.1)	1007 (70.1)
Guardian	11 (1.4)	15 (2.3)	26 (1.8)
Orphaned	27 (3.5)	30 (4.6)	57 (4)
Single parent	102 (13.1)	90 (13.7)	192 (13.4)
Step parent	37 (4.7)	17 (2.6)	54 (3.8)
Parents separated	53 (6.8)	25 (3.8)	78 (5.4)
Monthly pocket money(USD)			
≤ 20	275 (35.5)	318 (48.4)	593 (41.4)
21-40	233 (30.1)	149 (22.7)	382 (26.7)
41-60	108 (14)	84 (12.8)	192 (13.4)
61 and above	103 (13.3)	77 (11.2)	180 (12.6)

Figure 1: Lifetime Prevalence of Substances Use

Lifetime Prevalence of Substance Use

	Public	Private	Overall
NO	45.30%	58.60%	51.40%
YES	54.70%	41.40%	48.60%
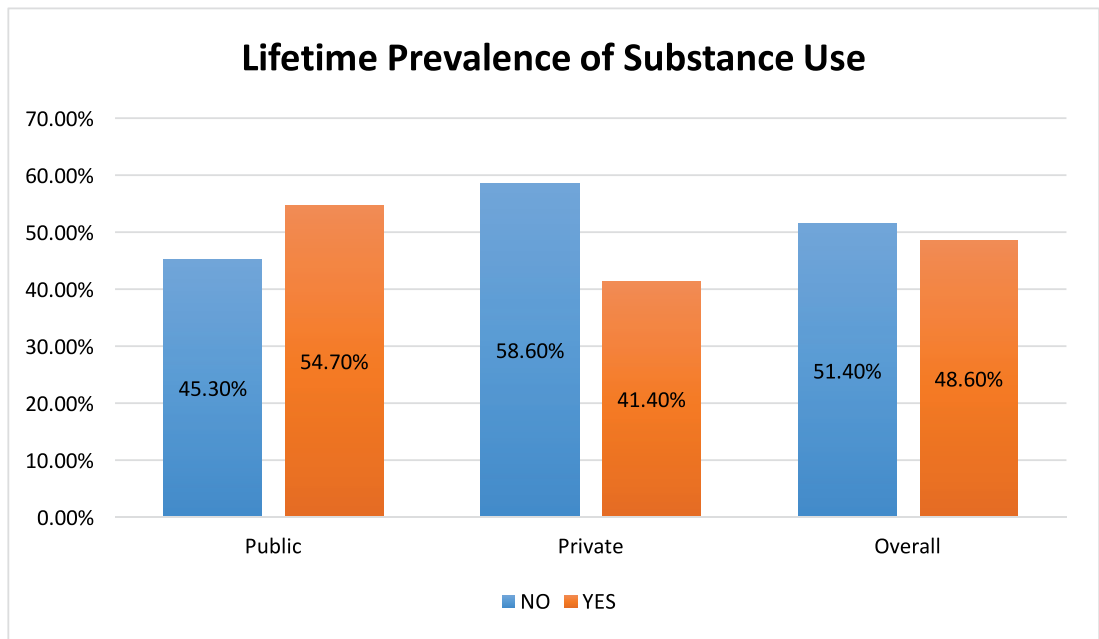
Table 2: Lifetime use of all substances

Variable	Public	Private	Overall
Tobacco	109 (14%)	78 (11.9%)	187(13.0%)
Shisha	149(19.1%)	107 (29%)	256 (17.8%)
Kuber	33(4.2%)	29(4.4%)	62(4.3%)
Alcohol	376(48.2%)	245(37.3%)	621 (43.2%)
Cannabis	121(15.5%)	83 (12.7%)	204 (14.2%)
Cocaine	28 (3.6%)	11 (1.7%)	39 (2.7%)
Amphetamine	19 (2.4%)	5 (0.8%)	24 (1.7%)
Inhalants	9 (1.9%)	5 (0.8%)	14 (1.0%)
Sedatives	34 (4.4%)	37 (5.6%)	71 (4.9%)
Hallucinogens	3(0.4%)	9(1.4%)	12 (0.8%)
Opioids	9(1.2%)	10(1.5%)	19 (1.3%)
Khat	100(12.8%)	65(9.9%)	165 (11.5%)
Muguka	63(8.1%)	53(8.1%)	116 (8.1%)

Table 3: *Current use prevalence of substance use in Public and Private Universities*

University Category	N	Mean	SD	Std. Error Mean	Mean Difference	T	Df	Sig. (2-tailed)
Public	780	.48	.500	.018	.22	8.936	1435	.000
Private	657	.26	.437	.017				

Table 4: Prevalence of Poly drug users - lifetime use and current users

Responses	Lifetime users			Current users		
	Public	Private	Combined	Public	Private	Combined
Non User	353 (24.6%)	382 (26.6%)	735 (51.1%)	497 (34.6%)	485 (33.8%)	982 (68.4%)
Single user	174 (12.1%)	104 (7.2%)	278 (19.3%)	166 (20.3%)	125 (8.7%)	291 (20.3%)
Poly users	253 (17.6%)	171 (11.9%)	424 (29.5%)	120 (8.4%)	42 (2.9%)	162 (11.3%)
Total	780 (54.3%)	657 (45.7%)	1437 (100.0%)	783 (54.6%)	652 (45.4%)	1435 (100.0%)

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