DRUG USE PATTERNS AND SOCIO-DEMOGRAPHIC PROFILES OF SUBSTANCE USERS: FINDINGS FROM A SUBSTANCE ABUSE TREATMENT PROGRAMME IN GABORONE, BOTSWANA

Morekwe Selemogwe[1], Seipone Mphele[1] & Kegomoditswe Manyanda[2]

[1]Department of Psychology, University of Botswana, Gaborone, Botswana
[2]Botswana Substance Abuse Support Network (BOSASNet), Gaborone, Botswana

ABSTRACT

Substance abuse is a critical problem in Botswana, yet empirical evidence on substance users is limited. The current study sought to examine patterns of drug use and socio-demographic profiles of clients who sought treatment at a substance abuse treatment centre in Gaborone, Botswana. Findings showed clients' age ranged from 13-64 years with a mean age of 28.55 years and SD ±12.59 years. More than half of the clients reported use of legal drugs (76.9%, n=307) and alcohol was the most frequently reported drug (n= 236, 59.1%). In contrast, slightly more than half of the clients reported use of illegal drugs (53.1 %, n=212) with marijuana being the most prevalent reported illicit drug (74%, n=104). Chi-square analysis also showed differences in use of illegal drugs as a function of clients' gender (χ^2 (1) =13.51, p <001) and as a function of the clients' age (χ^2 (4) = 64.04, p< .000). The findings of the current study have implications for the formulation of efficient substance abuse policy and interventions and as such recommendations are provided.

Key Words: Substance abuse treatment, drug use, illicit drugs, Botswana, socio-demographic variables

INTRODUCTION

Substantial evidence highlights the scope of alcohol abuse problem in Botswana (Campbell, 2004; Clausen, Rossow, Ingstad, Molebatsi, & Holmboe-Ottesen, 2005; Gujadhur & Gaborone, 2000; Molamu, 1989; Molamu & MacDonald, 1996; Phorano, Nthomang & Ntseane, 2005; Pitso, 2004, Selemogwe & White, 2013; Seloilwe, 2005; Tran et al., 2013; Weiser et al., 2006; Zetola et al., 2014) and the majority of the findings underline high rates of alcohol abuse among college and university students (i.e. in Alao, Forcheh, Roy & Tidimane, 2004; Campbell, 2006;

Corresponding author: Dr. Morekwe Selemogwe, Department of Psychology, University of Botswana, P/Bag 00705, Gaborone, Botswana. Tel: (264) – 3554158 Email: selemogwe@mopipi.ub.bw

Seloilwe, 2005; Mphele, Gralewski & Balogun, 2013). Additionally, a few prior studies have highlighted the prevalence of illicit drug use among university students (e.g. in Alao, 2007), with marijuana being cited as the most common illicit drug of choice among the youth (Diamond and Narcotics Squad Report, 2012). Consistent with findings elsewhere, Botswana findings indicate alcohol abuse is more prevalent among male students compared to female students (Mphele, Gralewski & Balogun, 2013). Furthermore, problems associated with substance abuse have been noted in substantial prior studies and these include aggressive behaviour, physical injury, risky sexual behaviours, poor academic performance (Alao, 2007; Malete, 2007; Phorano, Nthomang & Ntseane, 2005; Peltzer, 2009; Seloilwe, 2005; Weiser, et al. 2006). Of concern are findings from recent research endeavours which signify alcohol abuse as one of the major factors that accentuate the spread of HIV/AIDS among the youth and adults (see Seloilwe, 2005; Chilisa, Bennel & Hyde, 2001) given the country's high prevalence rate of HIV/AIDS. Although empirical evidence highlights substance abuse problem in Botswana, there is scant research on factors that contribute to the etiology of substance abuse among Batswana. Some researchers attribute boredom and lack of recreational facilities to alcohol use among the youth (Bennel, Chilisa, Hyde, Makgothi & Mpotokwane, 2001).

Whilst there is substantial empirical evidence on alcohol abuse in Botswana, to date investigators have marginally examined the prevalence of illicit drug use despite police and media reports that denote illegal drug use among the youth. As per data from Diamond and Narcotics Squad unit in Gaborone, between 2009 and 2011, there were 57 drug possession cases in which students from public, private and tertiary schools were involved. Data from the Diamond and Narcotics Squad unit show that most students were arrested for cocaine and marijuana. In addition to the aforementioned drugs, other common illicit drugs among the youth are mandrax, ecstasy pills, methamphetamines (Mr. Nkgetse, personal communication, 2012). Important to note is that police reports only provide information from arrests and seizures data hence knowledge about extent of the problem is limited. The lack of empirical evidence on illicit drug use limits the knowledge about the extent of the problem and consequently impacts on the formulation of substance abuse interventions. Further, empirical data about the common characteristics of substance abusers is pivotal in formulating substance abuse policies, prevention and intervention strategies that meet the needs of the subgroups that are at risk (Atilola, Ayinde & Adeitan, 2013; Hasan et al., 2009; Onyeka et al., 2012).

Purpose of the Study

The goal of the current study was twofold; firstly to provide surveillance information about the prevalence and patterns of drug abuse among substance users and secondly to examine the demographic characteristics of clients who attended a substance abuse treatment facility in Gaborone, Botswana.

METHOD

Setting

The current study utilized archival data from Botswana Substance Abuse Support

Network (BOSASNet) which is located in Gaborone, Botswana. BOSASNet is a non-governmental organization which was formed by concerned members of the public with the aim to address the emergent substance abuse problem in Botswana. The organization opened in September 2010 and currently offers free outpatient services to the general public and these include; substance abuse education, prevention, and rehabilitation and support services. Treatment is provided by substance abuse counsellors of who majority have an undergraduate degree in psychology. The counsellors also have Substance Abuse Counsellors Training, Foundation Level offered by BOSASNet. Currently, BOSASNet is the only facility in the country that offers substance outpatient treatment hence why the organization was selected for the current study.

Procedure and Measure

Prior to conducting the study, ethical approval was sought from Ministry of Health, Botswana. The study used data from all completed clients' intake forms who sought drug abuse treatment between September 2010 and December 2013. Prior to extracting and coding information from clients' records, all identifying information was removed from the clients' records. The study examined clients' demographic variables such as gender, age group, occupation, place of stay/residence, referral source and their reported drug abuse. A coding protocol was developed by the researchers and all the reported drugs were coded as two binary variables, with reported drug abuse coded as 1 and code 2 = no drug abuse reported. The list of drugs was based on the data from the Diamond and Narcotics Squad Report (2012). The reported drugs

were also classified as either legal or illegal. The clients' demographic variables were coded as follows;

1. Gender, code 1= male code 2= female
2. Occupational status, code 1= employed, code 2=unemployed code 3= student, code 4= retired
3. Age range, code 1= 10-20 yrs, code 2=21-30, code 3= 31-40, code 4= 41-50, code 5= 51-60, code 6= 61 and above
4. Place of residence, code 1= Gaborone, code 2= outside Gaborone
5. Referral source , code 1= self, code 2= health professional, code 3= family member code 4= friend, code 5= media, code 6= previous clients, code 7 = police

The principal investigator coded the intake reports following which the other two investigators coded the same intakes in an effort to ensure reliability of the results. The coded intakes were assigned a code number with no possible tracking of information.

Data analysis

The data was analyzed using SPSS version 21. Descriptive statistics such as frequencies and cross tabulations were used to describe clients' demographic information and patterns of the reported abused drugs. Chi Square was utilized to establish relationships between the variables.

RESULTS

Clients' Demographics

Over a period of three years (September 2010 -December 2013), BOSASNet offered substance abuse treatment to 399 clients and their age ranged from 13 to 64 years. The mean age for the population

was 28.55 years with SD = 12.59. The study revealed that more than half of the program participants were men (83%, n=331) with women constituting 16.8% (n= 67) of the clients. The majority of the clients were employed (40.4%, n=161), followed by students (31.8%, n=127), the unemployed (24.8%, n=99) and one retired individual (0.3%). A significant number of the clients resided in Gaborone and the surrounding areas (71.9%, n=287) while 28.1 % were from different parts of the country. Furthermore, 38.6%, (n=154) of the clients were referred by either medical or mental health practitioners, less than 30% were referred by family and friends (26.6%, n=106), a sizeable portion was referred by the media (22.3%, n=89) whereas only a few were self refereed (5.01%, n= 20). The police department and previous clients from BOSASNet also referred clients to the facility (3.0%, n=12).

Drugs Abuse Patterns, Gender and Age

More than half of the clients reported abuse of legal drugs (76.9%, n=307). The legal drugs included alcohol, cigarettes and prescription drugs and alcohol was the frequently reported abused drug (n= 236, 59.1%). There was no significant relationship between legal drug abuse and gender, χ2 *(1) = 3.04,* p =.08 however chi-square analysis indicates differences in abuse of legal drug use as a function of clients 'age range, *χ2 (4) =15.71,* p=.003. In contrast, slightly more than half of the clients reported abuse of illegal drugs (53.1 %, n=212) and marijuana was the most prevalent reported illicit abused drug (74%, n=104). In addition, marijuana was more prevalent among poly-drug users, χ2(1)= 85.00, p < .001. poly-drug users were also more likely to report alcohol abuse and and nicotine abuse. Table 1 below has detailed information about poly drug abuse report and reported drug abuse.

Furthermore, Chi- square analysis indicates differences in abuse of illegal drugs as a function of clients' gender, χ^2 (1) = 13.51, *p* <. 001 and as a function of the clients' age range, χ^2 (4) = 64.04, p < .001. Drug abuse was prevalent among men however; heroin was the only drug that was not prevalent in this group. In contrast, none of the female clients reported neither ecstasy nor mandrax abuse. With regards to clients' age, drug abuse was common among clients in the age range of 21-30 years (43%, n=169). Findings also indicate early age substance use (29.3%, n=117) and 43% of these clients were below age 18. On one end, the prevalence of drug abuse was less prevalent among clients who were 40 years and older (9.5%, n=38). The results are illustrated in Table 2 below.

Table 1. Cross tabulations of reported poly drug abuse and reported drug use

	Reported poly-drug use N (%)				
Reported drug use	**Yes**	**No**	**χ^2**	**df**	**P-value**
Nicotine	76 (58.46)	54 (41.54)	77.26	1	.000
Alcohol	95 (73.08)	35 (26.92)	15.48	1	.000
Marijuana	104 (80)	26 (20)	85.00	1	.000
Crack Cocaine	6 (4.62)	124 (95.38)	.009	1	.924

Table 2. Frequency of reported drug use, gender and age range

Substance/Drug	Gender N (%)		Age group				
	Male	Female	10-20	21-30	31-40	41-50	Above 50
Prescription drugs	2(0.50)	1(0.25)	2(0.50)	0(0)	1(0.25)	0(0)	0(0)
Nicotine	101(25.31)	17(4.26)	41(10.28)	45(11.28)	22(5.51)	4 (1.00)	6(1.50)
Alcohol	192(48.12)	44(11.03)	40(10.03)	103(25.81)	63(15.79)	19 (4.76)	12(3.0)
Marijuana	173(43.36)	14(3.51)	76(19.05)	90(22.56)	19(4.76)	1(0.25)	1(0.25)
Crack cocaine	13(3.26)	6(1.50)	0(0)	13(2.26)	6(1.50)	0(0)	0(0)
Cocaine	5(1.25)	2(0.50)	1(0.25)	4(1.00)	2(0.50)	0(0)	0(0)
Crystal Methamphetamine	1(0.25)	0(0)	0(0)	1(0.25)	0(0)	0(0)	0(0)
Ecstasy	2(0.50)	0(0)	1(0.25)	1(0.25)	0(0)	0(0)	0(0)
Mandrax	2(0.50)	0(0)	1(0.25)	1(0.25)	0(0)	0(0)	0(0)
Heroin	0(0)	2(0.50)	1(0.25)	0(0)	0(0)	1(0.25)	0(0)

Drug use patterns and employment status

Abuse of legal drugs was more prevalent among the employed (χ^2 (4) = 17.04, p= .002) and the common abused drug among this group was alcohol (73.9%, n=119). In contrast, illegal drug abuse was more prevalent among students (χ^2 (3) = 65.54, $p<$ .001) and the frequently reported abused drug among this group was marijuana (n= 95, 23.8%). In addition, abuse of prescription drugs and crystal methamphetamines was only prevalent among this group. Similar to students group, marijuana abuse was frequently reported by the unemployed clients (13.5%, n=44) and report of mandrax abuse was only observed within this group. Table 3 below has detailed information of employment status and drug patterns.

Table 3. Drug use patterns and employment status

Substance/Drug	Occupation N (%)			
	Employed	Unemployed	Student	Retired
Prescription drugs	1 (0.25)	0 (0)	2 (0.50)	0 (0)
Nicotine	44 (11.03)	28 (7.02)	46 (11.53)	0 (0)
Alcohol	161 (40.35)	52 (13.03)	57 (14.29)	1 (0.25)
Marijuana	33 (8.27)	54 (13.53)	95 (23.81)	0 (0)
Crack cocaine	11 (2.76)	7 (1.75)	1 (0.25)	0 (0)
Cocaine	3 (0.75)	0 (0)	4 (1.00)	0 (0)
Crystal methamphetamine	0 (0)	0 (0)	1 (0.25)	0 (0)
Ecstasy	1 (0.25)	1 (0.25)	0 (0)	0 (0)
Mandrax	0 (0)	2 (0.50)	0 (0)	0 (0)
Heroin	1 (0.25)	0 (0)	0 (0)	0 (0)

Note: Information was missing in some of the intake forms as such the numbers/ percentages on some variables do not add up 399 (100%).

DISCUSSION

The findings of the current study are consistent with findings from prior studies conducted in Botswana and those from elsewhere which indicate alcohol as the most common abused drug (i.e in Lopes, No´brega, Del Prette, Scivoletto, 2013). Easy accessibility, availability and affordability of alcohol especially home-made alcohol brews or non-commercial alcohol have been noted to contribute to the high prevalence of alcohol abuse in the country (von Rudolf, 2010). In addition; the high prevalence of alcohol abuse among Batswana is also attributable to social norms for tolerance of alcohol use in ceremonial activities (Molamu, 1989) and the lack of entrainment facilities (Gujadhur, 2000). Findings of the current study also confirm results by Alao (2007) and Diamond and Narcotics Squad Report (2012) which indicate marijuana as the most prevalent illicit drug among drug users. Reports of marijuana abuse were also prevalent among polydrug-abusers and this finding has been observed in several studies (see e.g. Conway et al., 2013; Onyeka, et al., 2012; Rather, Bashir, Sheikh, Amin, & Zahgeer, 2013) and marijuana users were likely to report alcohol abuse. In light of the "gate way hypothesis" which postulates that alcohol use facilitate subsequent initiation of marijuana use and consequently initiation of use of other drugs (see Fiellin, Tetrault, Becker, Fiellin & Hoff, 2013; Guxens, Nebot & Ariza, 2007; Olthuis, Darredeau, & Barrett, 2013), findings on poly-drug users' abuse patterns highlight a need to establish clients' developmental sequence involvement in drugs as this information can be used as a platform for formulating primary and secondary substance abuse interventions.

Gender differences were also observed; men were more likely to report drug abuse compared to their female counterparts. The results are consistent with findings from several prior studies (e.g in Alao, 2007; Campbell, 2006; Mphele, Gralewski & Balogun, 2013; Seloilwe, 2005). Studies that examined profiles of substance abusers in treatment facilities have also revealed the same gender differences among substance abusers (e.g. in Onyeka et al., 2012; Parry, Plüddemann, & Myers, 2005; Prajapati, Thakkar, Parikh, & Bala, 2013). It is probable that females who abuse drugs do not access drug treatment facilities as compared to males hence the high prevalence of drug abuse report among the male clients. In some studies, the noted gender difference among substance abusers has also been attributed to cultural acceptance of men's drug use, which according to some authors (e.g. Kumar et al., 2013; Rather et al., 2013) can result in females feeling embarrassed to seek drug treatment. As indicated above, prior studies have consistently shown that drug abuse is more prevalent among men than women and this might account to the low numbers of females in treatment compared to their male counterparts found in the current study.

The current study further indicates that substance abuse differs by age group. Substance abuse report was more prevalent among clients whose age range was 21- 30 but was less prevalent among older clients. This finding affirms Clausen, Rossow, Ingstad, Molebatsi, & Holmboe-Ottesen (2005) findings which showed that only 12% of the sample of older persons in Botswana was classified as hazardous drinkers. Similar findings were observed in studies conducted in India (Prajapati, Thakkar & Parik & Bala, 2013).

Similarly, research concerning the progression of substance use indicates that substance abuse peaks in early adulthood but declines with age thereafter (Chen & Jacobson, 2011). Noteworthy is substance abuse reported by underage children. Given that the legal age for drinking in Botswana is 21 years, the study's findings suggest prevalence of early age drug use among children in Botswana. Given the influential role of the media on children's' behaviour (see Scull, Kupersmidt, & Erausquin, 2013), some of the possible enabling factors for underage drinking in Botswana are the lack of legally binding regulations on alcohol advertising and product placement and the non existence of enforceable regulations regarding health warning labels on alcohol advertisements/ alcohol containers and alcohol sales promotions (see WHO, 2014). Of concern is that early age onset of drug use has been identified as risk factor for subsequent use (Kumar et al., 2013; Peltzer, 2009) and as such, further investigation of substance abuse among this subgroup is much needed in Botswana.

In contrast to most findings (e.g. in Henkel, 2011; Onyeka et al., 2012), the present study revealed that legal drug abuse report was common among the employed compared to the unemployed. Important to note is that studies on substances in the workplace demonstrate the prevalence of substance use and abuse among employees (e.g. in Harker Burnhams, Dada, Linda, Meyers & Parry; 2013). Not surprising, compared to other groups, abuse of expensive drugs was more prevalent among the employed. Several reasons have been attributed to prevalence of substance abuse among the employed. According to Harker Burnhams et al. (2013), certain work places and occupations have been shown to increase the likelihood of substance use due to their stressful nature as such further investigation is needed to unearth the link between employment and substance abuse in Botswana. With regards students' substance abuse, the prevalence of various drugs among this group mirrors findings from reports from Botswana Diamond and Narcotics Squad (2012) and findings from other countries (e.g. Atwoli, Mungula, Ndung'u, Kinoti & Ogot, 2011; Patrick et al., 2013; Parry, Myers, Morojele, Flisher, Bhana, Donson, Pluddenmann, 2004). In light of the well documented risk factors of substance abuse among adolescents and the youth, which include peer influence, familial role models who abuse drugs, dysfunctional family structure and lack of discipline, and family substance abuse history (Conway et al., 2013; Gutman, Eccles, Pec & Malanchuk, 2011; Trucco, Colder, Bowker, & Wieczorek, 2011; Van Ryzin, Fosco, & Dishion, 2012) it is important to extensively explore factors that predispose Batswana youth to drug abuse in order to come up with effective substance abuse interventions that target this subgroup. Furthermore, findings regarding media and family referrals underscore the importance of the involvement of the society in addressing substance abuse problems in the country. As such more effort should be exerted to use the media to address the evident substance abuse problem in Botswana.

Limitations

The findings of the current study should be considered in light of the study's limitations. The current study only relied on clients' drug abuse self reports and did not utilize data derived from any objective drug use/abuse assessment tools. However,

noteworthy is that such assessments are normally conducted after intake sessions. Future research needs to also examine clients' drug abuse as measured by objective means as urinalysis and blood tests as well as substance use measures such as the Alcohol Use Disorder Identification Test (AUDIT), to ensure accuracy in determining the patterns of drug use in Botswana. Another noteworthy limitation is the missing data in some of the utilized intakes which limits a true reflection of the patterns of drug abuse and socio-demographic information of substance abusers who seek treatment. The study population may not be representative of substance abusers in Botswana given that large majority of the clients were from one area of the country and also did not include drug users who do not seek treatment. Additionally other groups such the clients who are underage (10-18) were outnumbered by other age groups, therefore, findings about the substance abusers in this age category might not be a true reflection of those that did not seek treatment at the study site. Despite the study's limitations, the findings do provide preliminary data about drug abuse patterns and demographic information of substance abusers who seek treatment in Botswana.

Recommendations

The study's findings provide a platform for dialogue on prevention and intervention strategies that target subgroups that are at risk. More research effort is equally needed in addressing substance abuse among school children and the youth. School based substance abuse prevention programs are necessary to address early age drug abuse problems that are evidenced by the study's findings. In addition, findings on reported illicit drug abuse necessitate more research on prevalence and patterns of illicit drug use in Botswana. Given the high prevalence of drug abuse among men, future research should also focus on identifying risk and protective factors associated with drug use among this population to aid in substance abuse prevention strategies that are gender specific. The study's findings also speak to a need to review the current Botswana substance abuse policy which mainly focuses on alcohol abuse. Policy review should be informed by empirical evidence as from the current study in order to formulate effective substance abuse prevention and intervention strategies. Furthermore, given the magnitude of clients who access services at BOSASNet, the need for more substance treatment facilities with specialized personnel can not be understated. A call for utility of objective assessments tools is also reflected by the findings of the study. More research that examines substance abuse in the workplace is also needed to identify occupations and work places that are high risk with the aim of developing interventions that are specific for employees. Finally, an exploration of barriers to treatment is essential in ensuring provision of treatment to all who need it.

REFERENCES

Alao, A. A. (2007). *Alcohol Use in Universities: Analysis of Trends at the University of Botswana.* In Sherri McCarthy., Stephen Newstead., Victor Karandashev., Carto Prandini.,Claudio Hutz and William Gomes, (Eds.).Teaching Psychology Around the World. Cambridge Scholars Publishing, Newcastle, NE5 2JA, UK, pp. 439-457.

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. *BioMed Central Psychiatry*, *11* (34), 1-9

Bennel, P., Chilisa, B., Hyde, K., Makgothi, A., Molobe, E. & Mpotokwane, L. (2001). *The impact of HIV/AIDS on primary and secondary education in Botswana: developing a comprehensive strategic response*. Serial No.5. London: Ministry of Education/Department for International Development.

Chen, P., & Jacobson, K. C. (2012). Developmental trajectories of substance use from early adolescence to young adulthood: Gender and racial/ethnic differences. *Journal of Adolescent Health*, *50*(2), 154-163.

Clausen, T., Rossow, I., Ingstad, B., Molebatsi, R. M., & Holmboe-Ottesen, G. (2005). Patterns of alcohol consumption among older persons in Botswana. *Contemporary Drug Problems*, *32*(2), 717-193.

Conway, K. P., Vullo, G. C., Nichter, B., Wang, J., Compton, W. M., Iannotti, R. J., & Simons-Morton, B. (2013). Prevalence and patterns of polysubstance use in a nationally representative sample of 10th graders in the United States. *Journal of Adolescent Health*, 52(6), 716-723.

Degenhardt, L., & Hall, W. (2012). Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *The Lancet*, *379* (9810), 55-70.

Gujadhur, T., & Gaborone, B. (2000). Alcohol abuse intervention strategies for rural (Bushmen) settlements embarking on CBNRM. IUCN/SNV CBNRM support programme, Gaborone, Botswana.

Gutman, L. M., Eccles, J. S., Peck, S., & Malanchuk, O. (2011). The influence of family relations on trajectories of cigarette and alcohol use from early to late adolescence. *Journal of Adolescence*, *34*(1), 119-128.

Guxens, M., Nebot, M., & Ariza, C. (2007). Age and sex differences in factors associated with the onset of cannabis use: a cohort study. *Drug and Alcohol Dependence*, *88*(2), 234-243.

Fiellin, L. E., Tetrault, J. M., Becker, W. C., Fiellin, D. A., & Hoff, R. A. (2013). Previous use of alcohol, cigarettes, and marijuana and subsequent abuse of prescription opioids in young adults. *Journal of Adolescent Health*, *52*(2), 158-163.

Harker Burnhams, N., Dada, S., Linda, B., Myers, B., & Parry, C. (2013). The extent of problematic alcohol and other drug use within selected South African workplaces. *SAMJ: South African Medical Journal*, *103*(11), 845-847.

Hasan, N. M., Loza, N., El-Dosoky, A., Hamdi, N., Rawson, R., Hasson, A. L., & Shawky, M. M. (2009). Characteristics of clients with substance abuse disorders in a private hospital in Cairo, Egypt. *Journal of Muslim Mental Health*, *4*(1), 9-15

Henkel, D. (2011). Unemployment and substance use: a review of the literature (1990-2010). *Current drug abuse reviews*, *4*(1), 4-27.

Kumar, N., Kanchan, T., Unnikrishnan, B., Thapar, R., Mithra, P., Kulkarni, V., & Sarathy, S. (2013). Profile of Substance Use among Patients Attending De-Addiction Centres in a Coastal City of Southern India. *PloS one*, *8*(2), e57824, 1-4.

Lopes, G. M., Nobrega, B. A., Del Prette, G., & Scivoletto, S. (2013). Use of

psychoactive substances by adolescents: current panorama. *Revista Brasileira de Psiquiatria*, *35*, 51-61.

Malete, L. (2007). Aggressive and anti-social behaviours among secondary school students in Botswana: The influence of family and school based factors. *School Psychology International*, *28*(1), 90-109.

Molamu, L., & MacDonald, D. (1996). Alcohol abuse among the Basarwa of the Kgalagadi and Ghanzi districts in Botswana. *Drugs: Education, Prevention, and Policy*, *3*(2), 145-152.

Molamu, L. (1989). Alcohol in Botswana: A historical overview. *Contemp. Drug Problems*, *16*, 3-42.

Nkgetse, L. (2012). Botswana Diamond and Narcotics Squad. Gaborone, Botswana

Olthuis, J. V., Darredeau, C., & Barrett, S. P. (2013). Substance use initiation: the role of simultaneous polysubstance use. *Drug and Alcohol Review*, *32*(1), 67-71.

Onyeka, I. N., Uosukainen, H., Korhonen, M. J., Beynon, C., Bell, J. S., Ronkainen, K., & Kauhanen, J. (2012). Sociodemographic characteristics and drug abuse patterns of treatment-seeking illicit drug abusers in Finland, 1997–2008: The HUUTI study. *Journal of Addictive Diseases*, *31*(4), 350-362.

Parry, C. D., Myers, B., Morojele, N. K., Flisher, A. J., Bhana, A., Donson, H., & Plüddemann, A. (2004). Trends in adolescent alcohol and other drug use: findings from three sentinel sites in South Africa (1997–2001). *Journal of Adolescence*, *27*(4), 429-440.

Parry, C. D., Plüddemann, A., Myers, B. J., & Myers, B. J. (2005). Heroin treatment demand in South Africa: trends from two large metropolitan sites (January 1997-December 2003). *Drug and Alcohol Review*, *24*(5), 419-423.

Patrick, M. E., Schulenberg, J. E., Martz, M. E., Maggs, J. L., O'Malley, P. M., & Johnston, L. D. (2013). Extreme binge drinking among 12th-grade students in the United States: Prevalence and predictors. *JAMA pediatrics*, *167*(11), 1019-1025.

Peltzer, K. (2009). Prevalence and correlates of substance use among school children in six African countries. *International Journal of Psychology*, *44*(5), 378-386.

Prajapati, A., Thakkar, J., Parikh, S., & Bala, D. V. (2013). A study of socio-demographic profile of substance abusers other than tobacco abuse attending a de-addiction centre in Ahmedabad City. *International Journal of Medical Science and Public Health*, *2*(4), 924-927.

Phorano, O., Nthomang, K., & Ntseane, D. (2005). Alcohol abuse, gender-based violence and HIV/AIDS in Botswana: establishing the link based on empirical evidence. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, *2*(1), 188-202.

Pitso, J. M. (2004). Does alcohol use take away condom use? Qualitative evidence from Selibe Phikwe and Mahalapye town districts, Botswana. *African Journal of Drug and Alcohol Studies*, *3*(1&2), 53-73.

Rather, Y. H., Bashir, W., Sheikh, A. A., Amin, M., & Zahgeer, Y. A. (2013). Socio-demographic and Clinical Profile of Substance Abusers Attending a Regional Drug De-addiction Centre in Chronic Conflict Area: Kashmir, India. *The Malaysian Journal of Medical Sciences: MJMS*, *20*(3), 31-38.

Scull, T. M., Kupersmidt, J. B., & Erausquin, J. T. (2013). The Impact of Media-

Related Cognitions on Children's Substance Use Outcomes in the Context of Parental and Peer Substance Use. *Journal of youth and adolescence*, (43), 717-728.

Selemogwe, M., & White, D. (2013). An Overview of Gay, Lesbian and Bisexual Issues in Botswana. *Journal of Gay & Lesbian Mental Health*, *17*(4), 406-414.

Seloilwe, E. S. (2005). Factors that influence the spread of HIV/AIDS among students of the University of Botswana. *Journal of the Association of Nurses in AIDS Care*, *16*(3), 3-10.

Tran, B. R., Thomas, A. G., Ditsela, M., Vaida, F., Phetogo, R., Kelapile, D., & Shaffer, R. (2013). Condom use behaviours and correlates of use in the Botswana Defence Force. *International journal of STD & AIDS*, *24*(11), 883-892.

Trucco, E. M., Colder, C. R., Bowker, J. C., & Wieczorek, W. F. (2011). Interpersonal goals and susceptibility to peer influence: Risk factors for intentions to initiate substance use during early adolescence. *The Journal of early adolescence*, *31*(4), 526-547.

Van Ryzin, M. J., Fosco, G. M., & Dishion, T. J. (2012). Family and peer predictors of substance use from early adolescence to early adulthood: An 11-year prospective analysis. *Addictive* Behaviours, 37(12), 1314-1324.

Von Rudolf, A. (2010). Non commercial alcohol in Botswana: A case study from Nkoyaphiri district of Gaborone and Mogobane. Retrieved on May 29, 2014 from, www.global-action.org

Weiser, S. D., Leiter, K., Heisler, M., McFarland, W., Percy-de Korte, F., DeMonner, S. M., & Bangsberg, D. R. (2006). A population-based study on alcohol and high-risk sexual behaviors in Botswana. *PLoS Medicine*, 3(10), 1940-1948.

World Health Organization, Substance Abuse Department (2014). Global status of report on alcohol. Geneva: WHO.

Zetola, N. M., Modongo, C., Olabiyi, B., Ramogola-Masire, D., Collman, R. G., & Chao, L. W. (2014). Examining the relationship between alcohol use and high-risk sex practices in a population of women with high HIV incidence despite high levels of HIV-related knowledge. *Sexually Transmitted Infections*, doi:10.1136/sextrans-2013-051244.