Prevalence patterns and predictors of alcohol use and abuse among secondary school students in southern KwaZulu-Natal, South Africa: demographic factors and the influence of parents and peers

[a]**Ghuman S,** MPH, Lecturer
[b]**Meyer-Weitz A,** PhD, Professor
[c]**Knight S,** Senior Lecturer
[a]Department of Environmental Health, Mangosuthu University of Technology
[b]School of Psychology and [c]Department of Public Health Medicine, College of Health Sciences, University of KwaZulu-Natal, Durban
Correspondence to: Professor Anna Meyer-Weitz, e-mail: meyerweitza@ukzn.ac.za
Keywords: alcohol use, binge drinking, parental practices, peers, Southern KwaZulu-Natal, South Africa

Abstract

Background: The prevalence and predictors of alcohol use and abuse among school students were investigated with the aim of gaining insight to guide prevention interventions.

Method: A cross-sectional, self-administered survey pertaining to a one-month period was conducted among students in grades 11 and 12 in purposively selected schools with mixed-race groups. Frequencies and χ^2 analyses were conducted and forward stepwise, conditional entry logistic regression models were fitted to determine the significant demographic predictors and influence of peers and parents on students' alcohol use and binge drinking.

Results: About 54% of students had used alcohol before, while 14.5% had had their first drink before the age of 13. In the relevant month, 41% used alcohol and 32% engaged in binge drinking. Students who were more likely to have used alcohol in the preceding month were older [odds ratio (OR) = 1.44, P = 0.006], male (OR = 2.1, P < 0.001), white (OR = 5.1, P < 0.001), had often seen their fathers drunk (OR = 1.9, P < 0.001) and had friends who frequently use alcohol (OR = 3.5, P < 0.001). Students who were more likely to report binge drinking in the preceding month were older (OR = 1.6, P < 0.001), male (OR = 2.4, P < 0.001), white (OR = 1.6, P = 0.048), had often seen their fathers (OR = 1.5, P = 0.001) and mothers (OR = 1.4, P = 0.05) drunk and had friends who frequently use alcohol (OR = 3.6, P < 0.001).

Conclusion: The long-term consequences of hazardous drinking patterns initiated during adolescence may have negative effects on achievement in life, health and general well-being, and therefore these patterns are in need of urgent address. While older, white male students are at particular risk, the significant influence of peer and parental alcohol use is highlighted and should be considered when developing prevention interventions in schools.

Ⓟ **Peer reviewed. (Submitted: 2011-04-05. Accepted: 2011-07-20.)** **S Afr Fam Pract 2012;54(2):132-138**

Introduction

Alcohol use and abuse by adolescents is an enduring public health issue worldwide, including South Africa. The Global Status Report by the World Health Organization (WHO) points out that many school children experiment with alcohol before the age of 12 years and the WHO therefore encourages member states to implement effective strategies to delay the onset of alcohol use.[1] In South Africa, 12% of youth experiment with alcohol use before 13 years of age.[2]

The increase of alcohol intake among South African adolescents is a major cause of concern, as it has been linked to other risk behaviours, such as unsafe sex with an increased risk of human immunodeficiency virus (HIV) infection, teenage pregnancy, dropping out of school and delinquent or criminal behaviour.[3-6] Alcohol use during adolescence is thought to elevate risk of substance abuse later in life.[3,7,8] A study of substance abuse trends found alcohol to be the second most commonly abused substance, preceded by dagga/marijuana, among adolescent patients admitted for rehabilitation in Durban, KwaZulu-Natal.[9] The 2008 Youth Risk Behaviour Survey (YRBS) conducted among secondary school students reported an increase in the prevalence of having ever used alcohol, alcohol use and binge drinking in the preceding month across gender and age groups from the first YRBS in 2002.[2,10] The increase of alcohol abuse among female students is especially alarming. White and coloured students were found to be significantly more likely to use alcohol than black and Indian students in both surveys. While similar trends were reported for KwaZulu-Natal in the 2002 and 2009 YRBS reports, the

prevalences for alcohol use and binge drinking were higher than the national rates. Binge drinking was reported in other studies to be common among students of both sexes.[2,9-11] In an earlier study involving 1 318 students in grade 10 from 28 high schools in southern KwaZulu-Natal, 53% of males and 25% of females reported ever having used alcohol.[12] In 2006, media reports in this region highlighted the use of alcohol in fatal motor car accidents involving adolescents.[13]

However, adolescent alcohol use should be considered within a developmental framework, as experimentation and risk taking may occur during this stage with increased chances of negative short- and long-term consequences.[4,8] Peer influence, significant during this stage, has been linked to alcohol misuse.[14-16] However, parents remain influential during the adolescent years as younger adolescents listen to parents' opinions about alcohol, while older adolescents seek guidance from parents' own drinking habits.[14,17] Research show that when parents use alcohol frequently, their adolescents have an increased likelihood of exposure to alcohol and related risk behaviours.[18] Furthermore, adolescents with parents who held permissive attitudes towards alcohol use were found more likely to engage in heavy binge drinking. Parental permissiveness also influences peer associations with a significant relationship between peer influence and alcohol use.[19] Little attention has been paid to the role of parents in alcohol misuse of adolescents in the South African context.

The current study aims to extend the limited local knowledge in the district of students' alcohol use and binge drinking prevalence, and the influence of demographic factors and significant others, i.e. parents and peers, in their alcohol use behaviour in view of gaining useful insight to be used in the planning of future interventions.

Method

Research design and sampling

A cross-sectional survey was conducted during 2007. Purposive sampling was used to select all the secondary schools with mixed races in a southern KwaZulu-Natal (KZN) district from a Department of Education list, to enable the exploration of racial differentials. The schools were situated in areas known to contain a range of socio-economic classes from affluent to middle and lower income brackets. The study population was all the students in grades 11 and 12 as they were expected to be 16 to 18 years old (n = 1 227) and thus likely to have used alcohol.[2,10] While all received parental informed consent documentation, only 807 students (66%) returned the signed forms. The realised sample was n = 704 (57% response rate). Some students (9%) with parental consent either did not consent personally, or did not attend school on the day of the survey or did not complete their questionnaires. However, a degree of bias cannot be ruled out as some who use/abuse alcohol might have omitted to obtain parental/guardian permission for study participation. A sample size of n = 704 was considered adequate for a statistical power of 80%.

Research instrument

A self-administered questionnaire was developed in elementary English as English is used in the school but is not the home language of all the students. The questionnaire was tested for appropriateness and validity in a pilot study which included 90 adolescents from a similar high school in the region, but who were not included in the study. The questionnaire included sociodemographic items, such as sex, age, race and perceived socio-economic status (SES) measured on a five-point scale (very rich, rich, average, poor and very poor). Alcohol use among adolescents in terms of the frequency and quantity was investigated along the same lines as the questions used in the national YRBSs[9,10] in order to enable comparison. Questions regarding alcohol use included: age at which alcohol use was initiated, ever drinking alcohol (e.g. a beer, a glass of wine, or a tot of brandy), frequency of alcohol use and binge drinking (five or more drinks in succession) in the preceding month. Students were also asked who offered them their first drink and who is the most influential person regarding their alcohol use. Two questions were asked about significant others: how often their friends drank and how often they have seen their parents/guardians drunk (often=3, sometimes=2, never=1).

Ethical clearance

Ethical clearance was obtained from the Biomedical Research Ethics Committee of the College of Health Sciences, University of KwaZulu-Natal, South Africa. Permission was obtained from the Provincial Department of Education and principals of the participating schools. Information about the study and informed consent documentation was sent to all the eligible students' parents/guardians to obtain written informed consent for study participation. Written informed consent from students and parents/guardians were a prerequisite for participation with adequate emphasis on ethical issues, i.e. voluntary participation, confidentiality and anonymity of the information obtained.

Data collection and procedures

The information and consent documents were sent in sealed envelopes to the 1 227 parents/guardians of the eligible students. Only 807 signed consent forms were returned. The survey was conducted in each school's hall with consent from the principals and students. Educators were not involved in this process. The questionnaires were completed within 45 minutes and collected by the

researcher. The survey was conducted between January and April 2007.

Data analysis

The software package SPSS® version 17.0.1 was used for analysis. Frequencies were calculated for all the data items and χ^2 analyses were performed with the variables sex, race, age, SES and alcohol use and binge drinking in the preceding month. Two logistical regression models (forward stepwise conditional entry) were fitted to identify the most significant predictors pertaining to demographic factors and significant others' influence on alcohol use/abuse in the preceding month. Race was recoded into three categories, namely Indian, African/black and white/coloured. The latter two were placed in one group as only a few students were coloured (2.8%, n = 20). SES was recoded into poor, average and rich to improve the distribution for analysis. The following independent variables were entered in the first block: sex, age, and race (white and coloured = 1 vs. others = 0, Indian = 1 vs. others = 0, with black as reference category). The variables in the second block were frequency of peer drinking and perceived parental drunkenness. The dependent variables were alcohol use in the preceding month (yes = 1, no = 2), and binge drinking in the preceding month (yes = 1, no = 2).

Results

The demographic information of the participants is shown in Table I. The majority of the 704 participants were female (59.8%), slightly less than half (46.2%) were African, followed by Indian, white and coloured students. English and Zulu were the most common home languages and the majority (83.1%, n = 585) said that they were of an "average" SES.

Table I: Demographic characteristics of secondary school students (n = 704)

Characteristic	n	%
Age		
16 years	300	42.6
17 years	292	41.5
18 years	112	15.9
Gender		
Male	283	40.2
Female	421	59.8
Race		
Asian/Indian	196	27.8
Black/African	325	46.2
White	183	23.2
Coloured	20	2.8
Home language		
Afrikaans	64	9.1
English	317	45.0
Zulu	308	43.8
Other	15	2.1
Perceived socio-economic status		
Very rich	13	1.8
Rich	75	10.7
Average	585	83.1
Poor	24	3.4
Very poor	7	1.0

Adolescent alcohol use

More than half (54%) of the adolescents reported that they had consumed alcohol at some time in their life. The majority (28.6%) who used alcohol before had their first drink when they were 15 to 16 years old, 22.45% had it when they were 13 to 14 years old and 14.5% used alcohol before they turned 13.

Table II depicts the prevalence of alcohol use of both the YRBSs[2,10] and the current study. In comparison to the YRBSs, a higher prevalence was reported in the current study for using alcohol before (53.8%), alcohol use in the preceding month (40.8%) and binge drinking in the preceding month (31.8%).

In Table III, the frequency of alcohol use and binge drinking in the preceding month is shown. While 59.2% did not consume alcohol in the preceding month, it is of concern that a small group of students reported drinking alcohol more than once a week (7.8%) and some even every day (1.1%). About 32% of the students reported engaging

Table II: Comparison between alcohol use prevalence from the Youth Risk Behaviour Surveys (YRBS)[6,7] and the current Southern KwaZulu-Natal school-based study (SKZN)

YRBS 2002 (n = 10 481)			YRBS 2008 (n = 10 038)			SKZN 2007 (n = 704)		
Males	Females	Total	Males	Females	Total	Males	Females	Total
Ever used alcohol								
56.1%	43.5%	**49.1%**	54.4%	45.1%	**49.6%**	64.3%	46.8%	**53.8%**
Alcohol use in preceding month								
38.5%	26.4%	**31.8%**	40.5%	29.5%	**34.9%**	51.2%	33.7%	**40.8%**
Binge drinking in preceding month (more than five drinks in succession)								
29.3%	17.9%	**23%**	33.5%	23.7%	**28.5%**	43.5%	24%	**31.8%**

in binge drinking during the preceding month, while 21% (n = 148) of students reported binge drinking twice or more in the preceding month.

Alcohol use and binge drinking was reported by significantly more male than female students [$\chi^2(1, n=704) = 21.5$, $P < 0.001$; $\chi^2(1, n=704) = 29.6$, $P < 0.001$]. A significant difference was found among different age groups regarding alcohol consumption and binge drinking in the preceding month [32% (16yrs), 45.5% (17yrs), 51.8% (18yrs); $\chi^2(2, n=704) = 27.9$, $P < 0.001$ and 23% (16yrs), 34.9% (17yrs), 47.3% (18yrs); $\chi^2(2, n=704) = 24.5$, $P < 0.001$ respectively]. A significant difference was observed among the race groups regarding using alcohol and binge drinking in the preceding month [34.7% (Indian), 26.8% (black), 72.1% (white); $\chi^2(2, n=704) = 103.91$, $P < 0.001$ and 29.6% (Indian), 24.0% (black), 48.1% (white); $\chi^2(2, n=704) = 31.9$, $P < 0.001$ respectively]. A significant difference was also highlighted among SES groups regarding binge drinking in the preceding month [poor (45.2%), average (29.9%) and rich (39.8%); $\chi^2(2, n=704) = 6.1$, $P < 0.048$]. When this finding was investigated according to race group, SES and binge drinking was only significant for the white/coloured student group [poor (90%), average (43.6%), and rich (54.5%); $\chi^2(2, n=183) = 8.7$, $P < 0.013$].

Alcohol use and significant others

Parents and guardians seemed to be the most influential people regarding alcohol use. Among the female group the majority (56.8%, n = 239) reported parents/guardians as the most influential person in their life, followed by friends (n = 120). Among the male students, both parents/guardians and friends were considered influential (43.1%, n = 122 and 41.7%, n = 118 respectively). For both the female and male groups, friends, rather than others, offered them their first alcoholic drink (35.2% of females, n = 148; 47.5% of males, n = 134). The majority of the female (77.4%) and male (81.6%) students reported never having seen their mothers drunk while only 6.4% of females and 3.9% of males said that they have often seen their mothers drunk. About half of females (52.3%) and males (54.1%) had never seen their fathers drunk while fathers were often seen drunk by 18.8% of female and 15.2% of male students.

Determinants of adolescent alcohol use and binge drinking in the preceding month

The significant predictors for alcohol use/abuse in the preceding month, as shown in the final models of the forward stepwise (conditional entry) binary logistic regression models, are shown in Table IV. The significant demographic predictors for alcohol use in the preceding month are: (1) age: for every one year's increase in age, students were 1.4 times more likely to use alcohol, (2) sex: males were about twice as likely to use alcohol, and (3) race: white students were about five times more likely to have used alcohol in the preceding month. Interpretation of race should be done cautiously owing to the wide confidence interval. When considering predictors for binge drinking, for every one year's increase in age, students were 1.6 times more likely to report binge drinking, males were about 2.4 times more likely to binge drink and white students were about 1.6 times more likely to binge drink than the other respective groups.

With regards to the influence of significant others, the frequency of peer drinking is a highly significant predictor for both alcohol use and binge drinking as adolescents who have friends who drink more frequently were about 3.6 times more likely to report using alcohol and binge drinking in the preceding month. Parental alcohol-use practices are important, as students who have often seen their fathers drunk were 1.9 times more likely to have used alcohol in the preceding month and 1.5 times more likely to have engaged in binge drinking in the preceding month. Those who have often seen their mothers drunk were about 1.4 times more likely to have engaged in binge drinking in the preceding month.

Table III: Frequency of alcohol use and binge drinking in preceding month by sex (n = 704)

Items and response options	Males (%)	Females (%)	Total (%)
Frequency of alcohol use in the preceding month			
None	138 (19.6%)	279 (39.6%)	417 (59.2%)
Once a month	56 (8.0%)	69 (9.8%)	125 (17.8%)
Once a week	53 (7.5%)	46 (6.5%)	99 (14.1%)
More than once a week	31 (4.4%)	24 (3.4%)	55 (7.8%)
Every day	5 (0.7%)	3 (0.4%)	8 (1.1%)
Frequency of binge drinking in preceding month			
None	160 (22.7%)	320 (45.5%)	480 (68.2%)
Once	38 (5.4%)	38 (5.4%)	76 (10.8%)
Twice	25 (3.6%)	35 (5.0%)	60 (8.5%)
At least three times	60 (8.5%)	28 (4.0%)	88 (12.5%)

Table IV: Logistic regression analysis outcomes of socio-demographic predictors and significant others' influence on alcohol use and binge drinking in the preceding month (n = 704)

Variables*	Parameter estimates (Beta)	[a]SE	Wald statistic df =1	P value	Odds ratio	95% Confidence intervals	
						Lower limit	Upper limit
Alcohol use in preceding month†							
Age	0.366	0.134	7.472	0.006	1.442	1.109	1.874
Race (white vs. others)	1.634	0.237	47.549	<0.001	5.124	3.220	8.153
Sex	0.732	0.191	14.703	<0.001	2.080	1.430	3.024
Father drunk	0.683	0.132	26.865	<0.001	1.979	1.529	2.563
Peer alcohol use frequency	1.269	0.161	61.838	<0.001	3.559	2.593	4.883
Binge drinking in preceding month‡							
Age	0.490	0.134	13.401	<0.001	1.632	1.256	2.122
Race (white vs. others)	0.460	0.234	3.873	0.048	1.584	1.002	2.505
Sex	0.870	0.191	20.854	<0.001	2.387	1.643	3.468
Mother drunk	0.348	0.177	3.855	0.050	1.416	1.001	2.004
Father drunk	0.432	0.129	11.202	0.001	1.540	1.196	1.984
Peer alcohol use frequency	1.279	0.165	59.755	<0.001	3.592	2.597	4.967

a = standard error

* Independent variables: race (white and coloured = 1, others = 0; Indian = 1, others=0, reference category: African/black); sex (male = 1, female = 0); age (higher score = older age); mother/father drunk (higher score = more often), friends drink (higher score = more often). Dependent variables: yes = 1, no = 0

† Hosmer and Lemenshow goodness-of-fit test (χ^2 = 5.571, df 8, P = 0.695)

‡ Hosmer and Lemenshow goodness-of-fit test (χ^2 = 8.082, df 8, P = 0.426)

Discussion

The study aimed to identify the prevalence patterns and predictors of alcohol use and binge drinking among students in mixed-race secondary schools in a southern KwaZulu-Natal district. Alcohol use and abuse was considered in a developmental framework and the influence of significant others, i.e. peers and parents, was investigated in this regard.

The study found that about 14.5% of students started consuming alcohol before the age of 13, a slightly higher figure than the 13.6% reported in the 2009 YRBS[2] for students in KwaZulu-Natal. The data suggested that youths of 13 to 16 years of age are at particular risk to initiate alcohol use: about 51% of the sample started using alcohol before they turned 17. Interventions should therefore focus on the primary prevention of alcohol use in this age group. The prevalence of having used alcohol before was slightly higher in this study than reported in an earlier study from this region[12] and also higher than that reported in other studies.[1,9,20] Similarly, the prevalence of alcohol use and binge drinking in the preceding month was also higher in this population than what was stated in the YRBS[2,10] and in a study conducted among rural students in the Limpopo region.[20]

An investigation in alcohol use trends in South Africa from 1993 to 2006 reported a range of 21.5% to 62% for current alcohol use and 14% to 40% for binge drinking.[21] In the study by Neser et al. regarding underage drinking in schools, 38% of adolescents admitted to using alcohol on one to five occasions in a month.[11] While the relationship between risky sexual behaviour and alcohol use was not investigated in the current study, adolescent alcohol use was found to increase the likelihood of risky sexual behaviour, e.g. unprotected sex, and thus contribute to HIV vulnerability[6,22] and violence.[23] It should be noted that the risk for HIV infection is heightened in context of the generalised HIV epidemic and is particularly significant in KwaZulu-Natal, which has reported HIV prevalences of 38.7% (CI 37.2-40.1) and 21.7% (CI 21.0-22.3) among 15- to 24-year-olds.[24,25]

The higher prevalence of alcohol misuse specifically among poor white and coloured students is contrary to the results of other studies conducted in South Africa and in the United States of America, where white students' alcohol use was linked to higher SES with greater disposable income available to purchase alcohol products.[26,27] The current study supports the significant gender and age differences reported in other studies conducted among adolescents in South Africa, of males and older adolescents being more likely to use alcohol and to engage in binge drinking than females and younger adolescents.[2,10,11,21] The overall increase of alcohol use and abuse among young women deserve attention as their drinking might be as hazardous as

that of young men in terms of clinical categories of safe and harmful drinking. More research is needed with regards to the frequency and amount of alcohol consumption among young females. It has been suggested that appropriate cut-off scores for the sexes need to be used to estimate women's alcohol-use risk, which would be different from men as men can generally consume more alcohol than females.[28] School-based alcohol prevention interventions therefore need to focus not only on young men, but also on females with specific consideration to safe drinking practices.

Similar to other studies, the students also viewed alcohol use and abuse as a way to have fun and to cope with problems at home.[11,29] These findings suggest that interventions should aim to help young people, especially students of low SES, to make informed decisions about alcohol use when socialising but more so when used as a coping strategy. The negative consequences that may stem from ineffective coping strategies need special attention and the need for the development of more effective coping skills should be recognised.

The influential role of peers is evident in the data as peers offered most respondents their first alcoholic drink, and those who perceived their friends to drink often were twice as likely to have consumed alcohol in the preceding month. Young episodic drinkers have been found to overestimate their peers' alcohol consumption to normalise their own binge drinking.[29,30] Nevertheless, peer pressure plays a significant role in alcohol misuse and needs to be considered in prevention interventions.[14,17,20]

Students also perceived parents to be influential in their own attitude to alcohol use; some parents were also the first to introduce their children to alcohol. However, adolescents seem to drink less alcohol when they obtain it from their parents than when the source is their peers or others.[11,31] The powerful influence of parents as role models is suggested by the data, as the perceived frequency of parental/guardian alcohol abuse played a significant role in adolescents' engagement in binge drinking while the abuse of alcohol by fathers was a significant predictor in students' alcohol use in the preceding month. Various studies support the influence of parents as role models and the influence of their practices on their children's alcohol use behaviour.[15,17,29,31-33] Problematic relationships with parents have also been found to facilitate adolescent alcohol use and abuse.[11,29] This highlights the responsibility of parents in the socialisation of their children and the protective role they can play against engagement in risk behaviours.[17] The paucity of intervention measures in this regard should be noted and special efforts are needed to develop appropriate and effective interventions involving both adolescents and their parents.

The findings of the study cannot be generalised to all students in schools with different race groups as non-probability purposive sampling was used. However, the correspondences of prevalence patterns with other studies provide support to the findings. Because of the problematic nature of self-reported behaviour, response bias is likely as some students might not have responded honestly.

Conclusion

While older, white male students are at a particular risk, prevention interventions need to explore peer influence and a realistic assessment and understanding of hazardous drinking for both males and females should be undertaken. Parents need to be included as an important target group and should be made aware of their influence as role models and their responsibility to foster responsible and safe alcohol-use practices. Health workers and medical practitioners can play a vital counselling role in this regard, especially when problem drinking is diagnosed in their adult clients. The long-term consequences of hazardous drinking patterns established during the adolescent years may lead to more serious alcohol and other substance abuse in later years, with negative effects on achievement in life, health and general well-being.

Acknowledgement

The authors wish to thank the management teams of the respective schools and parents for their support to the study as well as the learners for their participation.

Declarations

The authors declared no financial or personal conflict of interest, which may have inappropriately influenced them in writing this paper. Funding was received for the printing of the questionnaires.

References

1. World Health Organization. Global status report on alcohol [document online]. c2004. Available from: http://www.who.int/substance abuse/publications/global_status_report_2004_overview.pdf
2. Reddy SP, James S, Sewpaul R, et al. Umthente Uhlaba Usamila – The South African Youth Risk Behaviour Survey 2008. Cape Town: South African Medical Research Council; 2010.
3. Arata CM, Stafford J, Tims MS. High school drinking and its consequences. Adolescence 2003;38:567-580.
4. Miller JW, Naimai TS, Brewer RD, Everett-Jones S. Binge drinking and associated health risk behaviours among high school students. Atlanta, GA: Centre for Chronic Disease Prevention and Health Promotion; 2006.
5. Simbayi LC, Mwaba K, Kalichman SC. Perceptions of the combination of HIV/AIDS and alcohol as a risk factor among STI clinic attenders in South Africa:

Implications for HIV prevention. Social Behav Pers. 2006;34:535-544.

6. Abdool Karim Q, Meyer-Weitz A, Harrison A. Interventions with youth in high-prevalence areas. In K. Mayer K, Pizer HF, editors. HIV preventions: A comprehensive approach. London: Academic Press; 2009.
7. Agrawal A, Grant JD, Waldron M. Risk for initiation of substance use as a function of age of onset of cigarette, alcohol and cannabis use: findings in a Midwestern female twin cohort. Prev Med. 2006; 43:125-128.
8. King KM, Chassin L. A prospective study of the effects of age of initiation of alcohol and drug use on young adult substance dependence. J Stud Alcohol Drugs. 2007;68:256-265.
9. Parry CDH, Myers B, Morojele NK, et al. Trends in adolescent and other drug use: findings from three sentinel sites in South Africa (1997-2001). J Adolesc. 2004;27:429-440.
10. Reddy SP, Panday S, Swart D, et al. Umthenthe Uhlaba Usamila – The South African Youth Risk Behaviour Survey. 2002. Cape Town: South African Medical Research Council; 2004..
11. Neser JJ, Van der Merwe E, Ovens M, et al. Underage drinking in schools: an exploratory survey. Acta Criminologica 2003; 15:123-135.
12. Taylor M, Jinabhai CC, Naidoo K, et al. An epidemiological perspective of substance abuse among high school pupils in rural Kwa-Zulu Natal. S Afr Med J. 2003; 93:136-140
13. South Coast Sun Newspaper. 2006 Aug 25 and 2006 Sep 1.
14. Leteka JMM. Alcohol use/abuse amongst teenagers in selected high schools in Maseru city: The development of a health education programme (Lesotho). Dissertation Abstracts International Section A: Humanities and Social Sciences. Ann Arbor (MI): ProQuest Information & Learning; 2007.
15. Onya, EH, Madu NS, Govender, S. A qualitative study of home-brewed alcohol use among adolescents in Mankweng District, Limpopo Province, South Africa. In: Mental health and psychotherapy in Africa. Sovenga: UL Press of the University of Limpopo; 2005. p. 291-307.
16. Furguson CJ, Meehan DC. With friends like these ...: Peer delinquency influences across age cohorts on smoking, alcohol and illegal substance use. Eur Psychiatry. 2011;26:6-12.
17. Payne K, Meyer-Weitz A. Paternal parenting practices as protective factors of alcohol use among adolescent boys. Paper presented at the South African Association of Child and Adolescent Psychiatry and Allied Professions Congress; 2007 Sep 11-14; Cape Town, South Africa.
18. Hayes L, Smart D, Toumbourou JW, Sanson A. Parenting influences on adolescent alcohol use. Research Report No. 10, 2004, Melbourne, Vic. Australian Institute of Family Studies [document online]. c2004. Available from: http://www.aifs.gov.au/institute/pubs/resreport10/aifsreport10.pdf
19. Wood ME, Read JP, Mitchell RE, Brand NH. Do parents still matter? Parent and peer influences on alcohol involvement among recent high school graduates. Psychol Addict Behav. 2004;18:19-30.
20. Onya HE, Flisher AJ. Prevalence of substance use among rural high school students in Limpopo Province, South Africa. African Journal of Drug and Alcohol Studies 2007;7:71-80.
21. Peltzer K, Ramlagan S. Alcohol use trends in South Africa. J Soc Sci. 2009;18:1-12.
22. Simbayi L, Kalichman SC, Jooste S, et al. Alcohol use and sexual risks for HIV infection among men and women receiving sexually transmitted infection clinic services in Cape Town, South Africa. J Stud Alcohol. 2004;64:434-442.
23. Mathews S, Abrahams N, Jewkes R, et al. Alcohol use and its role in female homicides in the Western Cape, South Africa. J Stud Alcohol Drugs. 2009;70:321-327.
24. Department of Health. 2008 National antenatal sentinel HIV and syphilis prevalence survey, South Africa. Pretoria: Department of Health; 2009.
25. Shisana O, Rehle T, Simbayi LC, et al. South African national HIV prevalence, incidence, behaviour and communication survey 2008: A turning tide among teenagers? Cape Town: HSRC Press; 2009.
26. Reddy P, Resnicow K, Omardien R, Kambaran N. Prevalence and correlates of substance use among high school students in South Africa and the United States. Am J Public Health. 2007;97:1859-1864.
27. Watt TT, Rogers JM. Factors contributing to differences in substance use among black and white adolescents. Youth and Society 2007;39:54-74.
28. Young C, Mayson T. The Alcohol Use Disorders Identification Scale (AUDIT) normative scores for a multiracial sample of Rhodes University residence students. J Child Adolesc M Health. 22:15-23.
29. Payne K. Boys being boys: Psychosocial factors associated with alcohol use among mid-adolescent males in a Durban boys' high school [thesis]. Durban: University of KwaZulu-Natal; 2008.
30. Franca LR, Dautsenberg B, Falissard B, Reynaud M. Peer substance use overestimation among French university students: A cross-sectional survey. BMC Pub Health. 2010;10:169-178.
31. Haynes L, Smart D, Toumbourou JW, Sanson A. Parenting influences on adolescent alcohol use. Report prepared by the Australian Institute of Family Studies for the Australian Government Department of Health and Ageing [document online]. c2004. Available from: http://www.aifs.gov.au/institute/pubs/resreport10/aifsreport10.pdf
32. Chuang Y, Ennett ST, Bauman KE, Foshee VA. Neighbourhood influences on adolescent cigarette and alcohol use: Mediating effects through parent and peer behaviors. J Health Soc Behav. 2005;46:187-204.
33. Boyle JR, Boekeloo BO. Perceived parental approval of drinking and its impact on problem drinking behaviours among first-year college students. J Am Coll Health. 2006;54:238-244.