

EMPIRICAL PAPER

Reasons for Leaving School and Alcohol Use Among Out of School Youth in South Africa

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After students drop out of school, their alcohol use may vary according to the reason for dropping out. In this paper, out of school youth (OSY) are those between 13–20 years old, have not completed their schooling, and have not enrolled in secondary or high school for the current academic year. OSY are at heightened risk of alcohol use. This study examined the relationship between reasons for leaving school and alcohol use, taking into account gender differences. Survey data from 4222 OSY (mean age = 17.4 years, SD = 1.9; males = 59.4%) were analysed using ordinal regression. Leaving school for “not having enough money to pay for school fees” was associated with more alcohol consumption, among females living specifically in rural areas of Gauteng. However, in urban areas of Kwazulu Natal and Mpumalanga, females who left school for the same reason as their rural counterparts were less likely to consume alcohol in the past month. Males were more likely to consume higher levels of alcohol if they reported leaving school due to making someone pregnant, but only when they resided in peri-urban areas. Understanding the relationship between reasons for leaving school and alcohol use may give us insight into the profile of school dropouts at risk for alcohol use. This information is useful for intervention development across the school, home and community.

Keywords: Out of school youth; alcohol; school dropout; South Africa; respondent driven sampling

Introduction

Heavy use of alcohol results in approximately 2.5 million global annual deaths (WHO, 2014). Recent World Health Organization (WHO) data indicates that South Africa has one of the highest alcohol consumption rates in the world, with an annual average of 9.46 litres per capita among populations aged 15 years and older, which is above the global average of 6.13 litres per capita, and the regional average of 6.2 litres for Africa. Alcohol use is related to various individual and social issues. Alcohol dependence, liver cirrhosis, cancers and permanent brain damage are some of the negative long-term health consequences of heavy alcohol consumption (WHO, 2014). The negative short-term social and behavioural impacts of alcohol use include violence, crime, road traffic accidents, suicidal behaviour, injuries and unsafe sex (Morojele & Ramsoomar, 2016; Peltzer, Ramlagan, & Satekge, 2012; WHO, 2014).

Adolescents are particularly prone to risky behaviours under the influence of alcohol, with both immediate and long-term consequences, as they are exposed to high-risk environments and are also vulnerable to experimentation (Marshall, 2014). According to the Youth Risk behaviour Surveillance survey of the USA, national adolescent

lifetime alcohol consumption (ever having drunk alcohol in their life) was 63.2% (Kann et al., 2016). In South Africa, a relatively high number of learners aged 13–19 years reported lifetime alcohol use (49.2%), past month drinking (32.3%), and binge drinking (having an average of five alcoholic drinks on at least one occasion in the past month) (25.1%) (Reddy et al., 2013). It also appears that 12% of youth in South Africa start to drink before the age of 13 years (Reddy et al., 2013). This data demonstrates the vulnerability of South African adolescents.

While there are studies that have focused on school going learners and alcohol consumption in South Africa, out of school youth (OSY) have received less attention. OSY are described as those between the age of 13–20 years, not having completed their senior high school certificate, and have not been enrolled in secondary or high school for the current academic year. OSY reported significantly higher rates of alcohol use compared to school going learners (Aloise-Young & Chavez, 2002; Flisher & Chalton, 1995; Townsend, Flisher, & King, 2007). Approximately 120 million children are out of school globally, with almost half (45%) residing in sub Saharan Africa. In South Africa, approximately 4% drop out of primary school (age 13 years and below). From grade nine onwards (from age 16 years old) an estimated 12% drop out of school (Department of Basic Education, 2011; FHI360., 2014). OSY are at higher health risk for alcohol related death, disease, disability and negative behavioural and social outcomes, as they do not have the protective factor of school,

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such as school based interventions and the supervision and mentoring of teachers and peers (Fleisch, Shindler, & Perry, 2012). These high rates of dropout combined with the increased risk of heavy alcohol use among OSY calls for the development of alcohol prevention interventions for this population.

The reasons for youth to stay out of school are often multidimensional and complex (Brown, 2010). Cross-sectional and longitudinal analyses conducted in high-income countries have identified a number of factors that relate to high school dropout. These include low socioeconomic status (De Witte, Cabus, Thyssen, Groot, & van den Brink, 2013; Porteus et al., 2000; Townsend, Flisher, Chikobvu, Lombard, & King, 2008), single headed families (Inoue, Fukunaga, Fujita, & Okazaki, 2011; Porteus et al., 2000; Townsend et al., 2008), high use of substances, and low academic performance (De Witte et al., 2013; Inoue et al., 2011; Porteus et al., 2000; Stearns & Glennie, 2006; Townsend et al., 2008). The South African literature states that reasons for dropping out have also been attributed to bullying (Townsend et al., 2008), boredom (Flisher, Townsend, Chikobvu, Lombard, & King, 2010; Wegner, Flisher, Chikobvu, Lombard, & King, 2008), family needs (helping support the families, being pregnant, getting a job) (Flisher et al., 2010; Porteus et al., 2000), illness (Branson et al., 2014), and school related factors (academic performance, disliking school, not getting along with teachers and disciplinary consequences) (Flisher et al., 2010; Porteus et al., 2000). These studies suggest that OSY are diverse in the factors that lead them to leave school.

Alcohol use during adolescence has been associated with educational attainment and the likelihood of not completing school (Balsa, Giuliano, & French, 2011; Kelly et al., 2015; Lacruz & Molina, 2007; Staff, Patrick, Loken, & Maggs, 2008; Townsend et al., 2007). However, once students drop out of school, their alcohol use may vary according to the reason for dropping out. Understanding this relationship may give us insight into the profile of school dropouts at risk for alcohol use. From a prevention perspective, this may provide insight into intervention strategies to keep these individuals in school, as well as prevent further alcohol use. To date, only one study explored the relationship between different reasons for leaving school and subsequent substance use. Aloise-Young and Chavez (2002) reported that substance use was highest among Mexican-American adolescents who dropped out to be with friends and lowest among those who left due to family related reasons (Aloise-Young & Chavez, 2002). However, this previous study did not focus on alcohol use specifically, but focused on substance use in general, encompassing the use of tobacco, inhalants, hallucinogens, and alcohol use. Our study will explore the relationship between reasons for leaving school and alcohol use among OSY. Understanding these differences can enable program developers to implement differential alcohol prevention and cessation programs to help all types of dropouts.

Specific reasons for dropout and their association with alcohol use may differ across genders. Males consume alcohol significantly more than females worldwide, as well as in South Africa (Reddy et al., 2013; WHO., 2014). However,

some longitudinal studies reported higher rates of alcohol use among female OSY compared to males (Isralowitz & Reznik, 2011). Reasons for leaving school also differ for males and females. A comparative analysis of seven representative studies conclude that male students more often dropout of school due to perceptions of poor academic performance and disciplinary problems (Doll, Eslami, & Walters, 2013). Males may be more likely to experience pressure to contribute to the family income and need to secure employment, whereas females are more likely to leave for family formation and caretaking responsibilities (Flisher et al., 2010; Stearns & Glennie, 2006). In South Africa, Townsend et al., (2008) found that females compared to males were more likely to drop out of school because of bullying. Based on these previous studies, we expect that the relationship between reasons for leaving school and alcohol use will also differ between males and females.

The present study will explore the following research question: What is the relationship between reasons for leaving school and alcohol use, taking into account possible gender differences? The gained knowledge will help health promoters understand those OSY at risk for alcohol use in South Africa, in order to formulate future effective alcohol prevention and cessation programs for this population.

Methods

Participants and sampling

A non-probability technique was used to select four of the nine provinces (Kwazulu Natal, Western Cape, Mpumalanga and Gauteng) in South Africa to conduct the study. The provinces selected represented all racial (black African, White, Indian, Coloured and Other) and language groups of South Africa. The inclusion criteria for this study were as follows: being between the ages of 13–20 years, not having completed their senior high school certificate and have not been enrolled in secondary or high school for the current academic year. The researchers were unable to identify a register consisting of OSY, and therefore decided that respondent driven sampling (RDS) was an appropriate method for recruiting OSY (Heckathorn, 1997; Ramirez-Valles, Heckathorn, Vázquez, Diaz, & Campbell, 2005).

A nationally representative set of schools ($n = 85$) using a stratified cluster sample design served as a starting point for recruiting the initial OSY participants or “seeds.” These initial “seeds” for the RDS process were recruited by obtaining a list of OSY from the schools. The target was twenty “seeds” per school site. All seeds that met the OSY criteria were contacted. If schools were unable to provide lists of OSY, survey administrators had to recruit seeds directly from the community, such as approaching young people walking the street who appeared to meet the predetermined criteria.

Each seed was required to identify and refer a maximum of three OSY in their community to participate in the study. Participants that were recruited in this “first wave” of sampling were themselves asked to identify and refer a further three OSY, and so on. Up to four waves of recruitment were conducted to gain 4432 OSY participants (**Figure 1**) (Reddy et al., 2011). Survey administrators made use of the coupon system to help them track the RDS recruitment

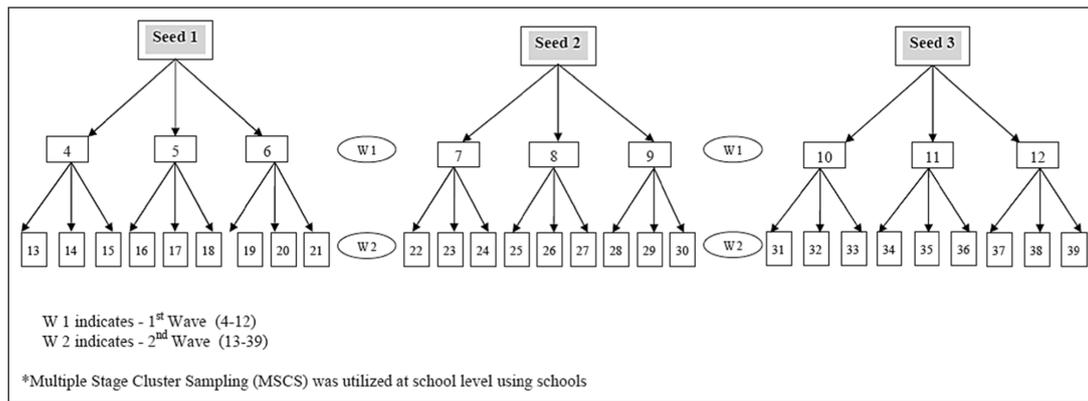


Figure 1: Respondent driven sampling for out of school youth – a graphical illustration of two sampling waves. Taken from “Health Risk Behaviours, life skills and socio-economic status survey of Out of School Youth in South Africa: An investigation into sexual and other behaviours that place the next generation at risk” by Reddy et al., 2011, Cape Town: South African Medical Research Council.

chain. Each respondent was given three coupons and invitation cards to recruit three other OSY whom they know of to participate in the survey. The coupons were designed to tear off so the recruiter could retain the left half of the coupon, and the potential recruit the right half. The potential recruit had the option of coming to the survey site (local community hall or school), with his/her half of the coupon and to participate in the survey if interested. The recruiter also returned to the survey site with their half of the coupon as proof of recruitment, and to collect monetary incentives for each OSY they successfully recruited into the survey (Heckathorn, 2002).

Once participants arrived at the survey site consent procedures were completed, followed by each participant completing a paper based self-administered questionnaire in one of the five languages (English, isiZulu, Xhosa, Afrikaans, and Sesotho). The questionnaire was designed in English and translated into four languages, namely isiZulu, Xhosa, Afrikaans and Sesotho, and then back translated from these official languages to English to check for consistency and correct translation. The self-administered questionnaire was designed to obtain socio-economic and demographic data as well as prevalence data of several behaviours that place out of school youth at risk, which include intentional and unintentional injury, substance use, sexual behaviour, nutrition and weight perception, physical activity and hygiene. The measures used in the present study are specified below.

Measures

Past month alcohol use

Alcohol use in the past month was the main outcome variable. Participants were asked to pick a statement that best described their alcohol consumption such as a beer, glass of wine or a “tot” of brandy in the past 30 days using 5 ordinal categories: “never” (0 days), “rarely” (1 to 5 days), “sometimes” (6 to 9 days), “often” (10 to 19 days) and “very often” (20 to 30 days).

Demographics

Demographic characteristics of the participants were obtained by asking their gender (1 = male, 2 = female), the province (1 = Gauteng, 2 = Kwazulu Natal, 3 =

Mpumalanga and 4 = Western Cape), the area that they reside in (1 = rural, 2 = urban, 3 = peri-urban), and their age. Participants race was classified according to the Department of Labour designated categories (1 = black African, 2 = Coloured, 3 = Indian, 4 = White, 5 = Other). The racial categories were not used with the intention of reifying social constructions developed during the Apartheid era, but rather were employed to allow investigation of ongoing health disparities that have endured post-apartheid (Stats SA, 2011).

Timing of the drop out

Participants were asked to state the last grade they were in at school (grade 7–12).

Reasons for leaving school

Reasons for leaving school were measured with eight binary items (0 = No, 1 = Yes). Seven items each represented a different specific reason to leave school (i.e., no reason for leaving school, being pregnant or made someone pregnant, working to help the family, not enough money to pay school fees, had to help with looking after the house and siblings, problems with school work, teachers or the learners, and the school was too far) and one item represented other not yet mentioned reasons. Participants were allowed to answer yes to more than one reason. Each reason was treated as a dichotomy in the analysis.

Analysis

IBM SPSS Statistics version 24 was used to analyse the data. Descriptive statistics were first explored to gain a clearer picture of the data, as well as to summarise the characteristics of the overall sample. Gender was cross tabulated against reasons for leaving school and the demographic variables. Fisher’s Exact test was used to explore the association between gender and reasons for leaving school (see supplementary analysis). Chi-Square analyses were conducted with the main outcome variable alcohol use and independent variables. Univariate and ordinal regressions were used to investigate the association between reasons for leaving school and alcohol use. In addition, the moderating effect of gender was tested in the model. In the case of significant interactions, sim-

ple effects analyses were conducted to further probe the nature of the interaction (Aiken, West, & Reno, 1991). All estimates were considered to be statistically significant if their p-value was below 0.05.

Results

Characteristics of the sample

In total, 4222 respondents completed the survey with all the questions used in this study.¹ As seen in **Table 1**, participants reported drinking as never (45.3%), rarely (24.1%), followed by drinking sometimes (17.9%), often (7.2%) and very often (5.5%). More than half the participants were males (59.4%) and the majority described themselves as black African (72.3%). The mean age was 17.4 years (SD = 1.9) and the average timing of the dropout was grade 9.3 (ages 15–17) (SD = 1.6). Less than half (46%) resided in rural areas and 27.8% resided in the Western Cape. Respondents' most common reasons for dropping out of school were: no reason for leaving school (males = 20.8%, females = 18.9%), they were pregnant or made someone pregnant (males = 17.8%, females = 19.8%), and they did not have enough money to pay school fees (males = 18.1%, females = 18.8%).

Model development of ordinal logistic regression model

The association between past month alcohol use and reasons for leaving school, moderated by gender was examined. Covariates that showed significant differences on the alcohol variable were also included in the model. It was found that gender \times reasons for leaving school interaction terms were non-significant ($p > 0.05$). Since there were significant variations of alcohol use across the various provinces and areas, additional analyses were conducted by including province and area in a four way interaction model: gender \times reasons for leaving \times province \times area. The model was further reduced by eliminating higher order non-significant terms based on omnibus tests, followed by eliminating lower order non-significant terms. Due to our initial hypotheses, the terms reasons for leaving school and reasons for leaving \times gender were kept in the models, regardless of their significance.

Ordinal regression results for model including interactions

The final model revealed in **Table 2**² showed the following significant three-way interactions: gender \times being pregnant or made someone pregnant \times area; gender \times not enough money to pay school fees \times province; and gender \times not enough money to pay school fees \times area. For simplicity, **Table 3** contains only the significant predictors and interaction effects. The full regression table is included in the supplementary file. Simple effects analyses, shown in **Table 3**, revealed significant two-way interactions of gender with not enough money to pay the school fees in rural areas of Gauteng (OR = 0.33, $p = 0.04$) and urban areas in Kwazulu Natal (OR = 3.467, $p = 0.02$) as well as urban areas in Mpumalanga province (OR = 0.44, $p = 0.04$). Significant two way interactions were also found with gender \times being pregnant or made someone pregnant in peri-urban

areas (OR = 3.80, $p = 0.00$). To investigate these significant two-way interaction effects involving gender in-depth, separate analyses for males and females were performed, as shown in **Table 3**. The odds for this study are defined as the odds of being in a higher alcohol use category, say C, (e.g., drank 20–30 days) versus being in category C-1 (e.g., drank 10–19 days). As seen in **Table 3**, we found that those living in rural areas of Gauteng, the odds ratio (OR) of leaving school due to not having enough money for school fees is smaller for males than for females (i.e., OR = 0.84 vs OR = 2.58, $p = 0.04$), if all other variables in the model are held constant. However, the opposite is true for those residing in urban areas of Kwazulu Natal (i.e., OR = 1.33 vs OR = 0.28, $p = 0.02$) and Mpumalanga (i.e., OR = 1.71 vs OR = 0.44, $p = 0.04$). In peri-urban areas, if all other variables in the model are held constant, the odds ratio of leaving school due to being pregnant or making somebody pregnant is greater for males than for females (i.e., OR = 1.76 vs OR = 0.48, $p = 0.00$).

Discussion

The goal of this paper was to examine the relationship between reasons for leaving school and alcohol use, taking into account possible differences based on gender among OSY. We found several significant associations between reasons for leaving school and alcohol use when demographic factors were incorporated into the analysis, in particular geographic location.

This study found that higher alcohol use due to leaving school for not having enough money for school fees was more likely among females living in rural areas of Gauteng. A previous national study found that a high number of females from rural areas cited financial constraints as their reason for leaving school in South Africa. This group of adolescents tend to be more socioeconomically disadvantaged and live in households where the average per capita household income is low (Branson, Hofmeyr, & Lam, 2014). Another study conducted in a rural school in Gauteng province found that both males and females drank high amounts of alcohol in the past month (Chauke, van der Heever, & Hoque, 2015). Yet, this study did not take into consideration the association between financial difficulties and alcohol use. In this study, the added stress of financial constraints and the use of alcohol as a coping mechanism for school dropouts may account for alcohol use being more prominent among females residing in rural areas of Gauteng.

Moreover, in urban areas of Kwazulu Natal and Mpumalanga, our findings demonstrate that females who left school for the same reason (not having enough money for school fees) as their rural counterparts were less likely to consume higher amounts of alcohol. Previous studies found that traditionally among African communities, alcohol use was limited to males and to special occasions (Puljević & Learmonth, 2014). Alcohol use may be less prominent among females in these regions due to the prevailing traditional cultural norms towards alcohol use among females. Moreover, various dimensions of urban poverty such as poor living conditions, financial stressors and unemployment among parents or guardians (Hove,

Table 1: Characteristics of the sample and reported reasons for leaving school per gender.

Characteristics	Total		Gender			
	% /Mean (SD)	n	Male %/Mean (SD)	n	Female %/Mean (SD)	n
Total	100	4222	59.4	2506	40.6	1716
Alcohol Use						
Never (0 days)	45.3	1832	36.1	859	58.5	973
Rarely (1 to 5 days)	24.1	973	26.5	631	20.6	342
Sometimes (6 to 9 days)	17.9	724	21.6	513	12.7	211
Often (10 to 19 days)	7.2	292	8.6	205	5.2	87
Very often (20 to 30 days)	5.5	223	7.2	172	3.1	51
Province						
Gauteng	23	971	26.6	667	17.7	304
Kwazulu Natal	27.3	1153	24.1	603	32.1	550
Mpumalanga	22	930	19.9	498	25.2	432
Western Cape	27.7	1168	29.4	738	25.1	430
Race						
Black African	72.5	2995	70.2	1716	75.9	1279
Coloured	21.8	899	23.7	580	18.9	319
Indian	1.7	70	2.2	54	0.9	16
White	1.4	58	1.2	29	1.7	29
Other	2.6	108	2.7	65	2.6	43
Area						
Rural	46.1	1673	44.6	953	48.3	720
Urban	30.4	1103	32.7	699	27.1	404
Peri urban	23.5	855	22.8	487	24.7	368
Reasons for leaving school						
No reason for leaving	20	845	20.8	520	18.9	325
You were pregnant or made someone pregnant	18.6	787	17.8	447	19.8	340
Working to help the family	16.8	708	17.4	435	15.9	273
Not enough money to pay for school fees	18.4	777	18.1	484	18.8	323
Had to help with looking after the house and siblings	5.1	214	4.9	123	5.3	91
Problems with school work, teachers or the learners	10.4	441	10.7	267	10.1	174
The school was too far	4.4	185	4.5	112	4.3	73
Other	12.3	518	12.4	311	12.1	207
Age	17.4(1.6)	4215	17.4(1.9)	2458	17.6(1.7)	1683
Timing of the dropout						
Grade 7 or lower	18.5	747	19.4	461	17.3	286
Grade 8	16.8	677	17.5	416	15.8	261
Grade 9	17.2	691	18.7	45	14.9	246
Grade 10	20	805	19.6	465	20.6	340
Grade 11	16.8	678	15.6	370	18.7	308
Grade 12	10.7	429	9.2	219	12.7	210

Table 2: Ordinal regression results for the model including interaction terms with province, area, and gender.

	Estimate	S.E	95% Confidence Interval			P-value
			Lower	Odds Ratio	Upper	
Kwazulu Natal (Ref Gauteng)	0.11	0.37	-0.61	1.12	0.83	0.76
Mpumalanga	-0.50	0.38	-1.24	0.61	0.24	0.18
Western Cape	-0.69 ⁺	0.41	-1.50	0.50	0.12	0.09
Reason for leaving: Being pregnant or made someone pregnant	-0.81 ⁺	0.37	-1.53	0.44	-0.09	0.03
Rural (Ref peri-urban)	-1.82 ⁺	0.47	-2.74	0.16	-0.90	0.00
Urban	-0.75	0.50	-1.73	0.47	0.24	0.14
Black African (Ref Other)	-0.06	0.24	-0.53	0.94	0.41	0.80
Coloured	0.26	0.26	-0.24	1.30	0.77	0.30
Indian	0.67 ⁺	0.37	-0.05	1.95	1.38	0.07
White	0.02	0.40	-0.75	1.02	0.80	0.96
Gender * Being pregnant or made someone pregnant	1.33 ⁺	0.47	0.42	3.80	2.25	0.00
Gender * Rural (Ref peri-urban)	1.97 ⁺	0.61	0.78	7.16	3.16	0.00
Not enough money to pay for school fees * Kwazulu Natal (Ref Gauteng)	-0.29	0.40	-1.08	0.75	0.50	0.48
Not enough money to pay for school fees * Mpumalanga	-0.98 ⁺	0.42	-1.80	0.37	-0.16	0.02
Not enough money to pay for school fees * Western Cape	-0.65	0.46	-1.55	0.52	0.24	0.15
Being pregnant or made someone pregnant * Rural (Ref peri-urban)	0.82	0.36	0.12	2.28	1.52	0.02
Being pregnant or made someone pregnant * Urban	0.88 ⁺	0.39	0.12	2.40	1.64	0.02
Not enough money to pay for school fees * Rural (Ref peri-urban)	1.03 ⁺	0.36	0.32	2.79	1.73	0.00
Not enough money to pay for school fees * Urban	0.11	0.38	-0.64	1.12	0.86	0.76
Not enough money to pay for school fees * Kwazulu Natal (ref Gauteng) * gender	-0.07	0.50	-1.04	0.93	0.91	0.89
Not enough money to pay for school fees * Mpumalanga * gender	0.99	0.52	-0.03	2.69	2.00	0.06
Not enough money to pay for school fees * Western Cape * gender	0.94	0.56	-0.16	2.55	2.03	0.09
Being pregnant or made someone pregnant * Rural (Ref peri-urban) *gender	-1.62 ⁺	0.46	-2.53	0.20	-0.72	0.00
Being pregnant or made someone pregnant * Urban * gender	-1.37 ⁺	0.50	-2.34	0.26	-0.39	0.01
Not enough money to pay for school fees * Rural (Ref peri-urban) * gender	-0.80	0.46	-1.70	0.45	0.10	0.08
Not enough money to pay for school fees * Urban *gender	0.56	0.48	-0.38	1.75	1.50	0.24

⁺ p < 0.05 indicates significance.

Ngwerume, & Muchemwa, 2013; Tacoli, McGranahan, & Satterthwaite, 2015) may be factors contributing to adolescent school dropout due to poverty and financial difficulties in urban areas.

In peri-urban areas, males were more likely to consume higher levels of alcohol if they cited leaving school due to making somebody pregnant. Peri-urban areas in South Africa are often characterised by poverty, crime, violence and unemployment (Adams et al., 2014), which can increase the likelihood of alcohol use and sexual risky behaviours. Previous studies conducted in South Africa found that risky sexual behaviour, such as having sex with multiple partners and engaging in unprotected sex was associated with harmful uses of alcohol, particularly among males (Adams et al., 2014; Manyapelo et al., 2016;

Page & Hall, 2009; Peltzer, Ramlagan, & Satekge, 2012). Moreover, among males, the negative perceived norms, expectancies and lack of behavioural control are key determining factors of alcohol use and risky sexual practices, as cited in the literature (Adams et al., 2014; Manyapelo et al., 2016).

Several limitations of this study must be considered when interpreting its findings. Data in this survey are based on self-report, and are therefore subject to the limitations of self-report bias. Given that the legal age for drinking in South Africa is 18, participants in this study were underage and may have also underreported or reported less drinking, impacting maybe negatively on our ability to find an association between some of the independent variables and alcohol use. Finally, the cross-sectional

Table 3: Simple effects analyses for interaction effects models with gender as moderator.

Gender × reasons for leaving: not enough money to pay for school fees			
	Rural	Urban	Peri-urban
Gauteng	Est = -1.11 (0.548)*	Est = 0.26 (0.53)	Est = -0.31 (0.54)
	OR = 0.33 (0.04)	OR = 1.29 (0.63)	OR = 0.73 (0.57)
	CI [-2.18-0.03]	CI [-0.78-1.29]	CI [-1.36-0.75]
	Females only		
	Est = 0.95 (0.45) ⁺		
	OR = 2.58 (0.03)		
	CI [0.09-1.86]		
	Males only		
	Est = -0.17 (0.32)		
	OR = 0.84 (0.59)		
CI [-0.80-0.45]			
Kwazulu Natal	Est = -0.12 (0.49)	Est = 1.24 (0.51)*	Est = 0.68 (0.58)
	OR = 0.89 (0.81)	OR = 3.47 (0.02)	OR = 1.98 (0.21)
	CI [-1.08-0.85]	CI [0.24-2.25]	CI [-0.37-1.73]
		Females only	
		Est = -1.08 (0.40) ⁺	
		OR = 0.34 (0.01)	
		CI [-1.87 -0.29]	
		Males only	
		Est = 0.28 (0.32)	
		OR = 1.33 (0.38)	
	CI [-0.35-0.92]		
Mpumalanga	Est = -0.17 (0.50)	Est = 1.19 (0.58)*	Est = 0.63 (0.58)
	OR = 0.84 (0.17)	OR = 3.29 (0.04)	OR = 1.88 (0.28)
	CI [-1.15-0.81]	CI [0.60-2.32]	CI [-0.51-1.77]
		Females only	
		Est = -0.82 (0.48)	
		OR = 0.44 (0.09)	
		CI [-1.76-0.11]	
		Males only	
		Est = 0.54 (0.33)	
		OR = 1.71 (0.10)	
	CI [-0.10-1.18]		
Western Cape	Est = 1.18 (0.47)	Est = 0.19 (0.48)	Est = -0.38 (0.53)
	OR = 3.25 (1.18)	OR = 1.20 (0.70)	OR = 0.69 (0.45)
	CI [-2.10-0.25]	CI [-0.76-1.13]	CI [-1.42-0.66]
Gender × reason for leaving: Being pregnant or made someone pregnant			
	Rural	Urban	Peri-urban
	Est = -0.29 (0.38)	Est = -0.03 (0.42)	Est = 1.34 (0.47)*
	OR = 0.75 (0.45)	OR = 0.97 (0.94)	OR = 3.80 (0.00)
	CI [-1.04-0.46]	CI [-0.86-0.80]	CI [0.42-2.25]
			Females only
			Est = -0.73 (0.37) ⁺
			OR = 0.48 (0.05)
			CI [-1.13 - 0.49]
			Males only
			Est = 0.57 (0.29) ⁺
			OR = 1.76 (0.05)
		CI [-1.45-0.13]	

* p < 0.05 indicates significance, Est refers to Estimate (S.E), OR (p value), CI refers to 95% Confidence interval.

⁺ Significant interaction effects were split for females and males.

nature of the study does not allow for causal relationships to be addressed. Yet, despite these limitations, this study provides valuable insight into the associations of alcohol among OSY in South Africa. Further investigation into other substance use such as hallucinogens and tobacco smoking may also prove beneficial. Future longitudinal and national studies will be needed to better elucidate causal mechanisms.

Conclusion

A wealth of research exists on the reasons why learners leave school. The literature has also shown that school dropouts are at heightened risk for alcohol use. The present study was the first study in South Africa to examine the relationship between reasons for leaving school and alcohol use. In this study, dropping out of school due to 'not being able to pay school fees', and 'making somebody pregnant' were found to be associated with alcohol use, but the strength and direction of these associations were dependent on gender, geographical area (urban, peri-urban or rural), as well as the province in which participants resided. This knowledge will help researchers target and identify those students that are at risk for dropping out of school and subsequent alcohol use, while also paying attention to the geographical and gender differences in South Africa. Such findings could also help implement interventions that combine career education, drug and alcohol resistance skills, counselling and other academic and personal guidance strategies targeting at-risk youth across schools, neighbourhoods and the home. At the policy level, attempts should be made to register all those who drop out of school to allow for tracking of school dropouts for intervention. Future research should address the methodological problems mentioned earlier. For instance, using standardised measures of alcohol use and possibly including a biological component of alcohol use to improve the reliability of self-report. Qualitative research would be particularly valuable in exploring the various reasons for dropping out and alcohol consumption in South Africa using other demographic variables as effect moderators, and reasons for leaving school that were not considered in this study.

Notes

¹ We computed the power of our study for a binary logistic regression analysis (i.e., a two-category outcome variable). Prior to data collection, power was computed assuming that we would be conducting a binary logistic regression. However, when data collection was complete we observed that there was not a clear binary division in the outcome responses as we had expected to find, and we recognised that an ordinal regression was more suitable. We may expect the power for our ordinal regression analysis, which makes full use of the ordinality in the data, to be larger than this estimate. We further assumed a medium effect size (OR = 1.3), a mean probability of being a drinker (compared to no drinker at all) equal to 0.3, a significance level of 0.05, a total sample size of 4322 and an R^2 equal to 0.49. The latter implies that the multiple correlation between the predictor of interest and all other predictors is assumed to be as high as 0.7,

which is reasonable considering the large number of predictors in our exploratory model. Finally, assuming a binary predictor of interest with a binomial distribution parameter equal to 0.5, we used G-power to determine the power of the regression test, for a single regression coefficient is equal to 0.89.

² The three-way interaction term tested in Table 3 (with p-value 0.08) is not the full interaction involving 'area'. If we choose a different reference area (eg. Urban) and run the regression again, the three-way interaction term: Not enough money to pay for school fees * Rural (Ref urban) * gender would be comparing the two-way interaction 'not enough money to pay for school fees * gender' between 'Rural' and 'Urban'. Here we found the significant three way interaction (Est = -1.361; p = 0.002). The same logic can be applied to the three way interaction term not enough money to pay for school fees*province*gender.

Additional Files

The additional files for this article can be found as follows:

- **S File 1.** Full disclosure package. DOI: <https://doi.org/10.5334/hpb.12.s1>
- **S File 2.** Spearman's correlation matrix for demographic variables, timing of the dropout, reasons for leaving school and alcohol use. DOI: <https://doi.org/10.5334/hpb.12.s2>
- **S File 3.** Fisher's Exact test for association between reasons for leaving school and gender. DOI: <https://doi.org/10.5334/hpb.12.s3>

Ethics and Consent

Ethical approval for the study was given by the South African Medical Research Council. Consent was obtained from the relevant Provincial Departments of Education and school principals to use the schools as initial points of contact, to establish the RDS process. Informed written ascent/consent was obtained from all participants, as well as from the parent/guardians of participants younger than 18 years.

Competing Interests

The authors have no competing interests to declare.

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