

Exploring exposure to television alcohol advertising and harmful alcohol use among South African youth

Ms D Moodley
Student No: 679261

Supervisors:
Ms S Nieuwoudt
Dr R Weiner

A research report submitted to the School of Public Health, University of the Witwatersrand in partial fulfilment of the requirements for the degree of Master of Public Health

2 June 2016

Declaration

I, Ms Dhamaravelli Moodley, declare that this research report is my original work. It is submitted in partial fulfilment of the requirements for the degree of Master of Public Health, in the field of Social and Behaviour Change Communication, in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to this or any other university.

A handwritten signature in black ink, appearing to read 'D Moodley', with a large, stylized initial 'D'.

2 June 2016

Abstract

Youth are targets of alcohol marketing (World Health Organization, 2010a). Studies conducted in South Africa indicate an increasing trend in the prevalence of drinking among youth (Rehm et al., 2004). Nationally, 49.2% of learners had drunk one or more drinks of alcohol (e.g. a beer, a glass of wine, or a 'tot' of brandy) in their lifetime, with significantly more males (53.8%) than female (44.9%) learners consuming alcohol. (Omardien et al., 2013). The same study found that 12.4% of learners reported having the first drink before the age of 13 years. Early alcohol initiation remains a concern and binge drinking is increasing, especially among females (Ramsoomar and Morojele, 2012).

One of the key considerations to reduce harmful alcohol use in South Africa is to place restrictions on alcohol advertising. This process was initiated in 1997 as part of a policy initiative to reduce the harmful impact of alcohol, but this was delayed (Parry, 2010). Hence, youth in South Africa are still exposed to alcohol marketing on television (TV) and other media. This study aimed to explore associations between TV alcohol advertising exposure and youth drinking patterns.

Methods

This is a secondary analysis of data from the National Communication Survey (NCS), a national cross sectional study that included data on TV exposure and alcohol-related behaviours in South Africa. The alcohol advertisements that were broadcast in each of the national television stations during the study period were also explored to establish the plausibility of exposure of youth to such advertisements. For this study, the sample was restricted to youth aged 16 - 24 years. Descriptive data on their alcohol use patterns and exposure to television were explored and tests of association were conducted for categorical outcomes, e.g. never having drunk, ever having drunk, binge drinking and problem drinking, and other variables, e.g. socio-demographic characteristics and TV viewership at the 95% confidence level.

Results

The prevalence for the three alcohol drinking patterns in the total sample of youth were 34.9% having ever drunk; 20.7% binge drinking; and 14.0 % problem drinking. Of those who had ever drunk, 60.5% engaged in binge drinking and 41.2% had problem drinking, with males outnumbering females. A number of other characteristics, beyond sex, were also associated with the drinking patterns, including age, education, employment, socio-economic status (SES), and race. The nature of these associations varied according to the drinking patterns, namely, having ever drunk, binge drinking and problem drinking. The frequency of television viewership was associated with the three drinking patterns of the youth. All four television channels had relatively high numbers of alcohol advertisements during the NCS data collection period, meaning that youth reporting television exposure were also likely to have seen alcohol advertisements. The implications of these findings are discussed in light of the broader literature on youth drinking patterns, television viewership patterns and alcohol advertising.

Conclusions

Youth drinking patterns, particularly binge drinking and problem drinking, are of concern. Given that exposure to TV was associated with drinking and all channels had high numbers of alcohol advertisements, restrictions on alcohol advertising on TV should be considered to prevent or reduce alcohol-related harm among South African youth.

Acknowledgements

I wish to thank my supervisors, Ms S Nieuwoudt and Dr R Weiner for their expertise, guidance and ongoing motivation in getting me through this very intense experience and in supporting me with the write-up of this report. Dr Nicola Christofides and Dr Leane Ramsoomar, thank you for your expertise and emotional support that helped carry me through this period of my life.

Many thanks, Sarah Magni, for your assistance in helping me understand the primary dataset and in answering my many questions, to complete this report.

I am very grateful to Helen Savva for your mentorship and encouragement to complete this degree, to Marlene Schmidt and Dr Flavia Senkubuge for your assistance with graphics and tables and Professor Charles Parry for ongoing information and support.

I also gratefully acknowledge the financial grant from the University of the Witwatersrand for the purchase of data from Nielsen South Africa that made it possible to conduct this study and complete this report and a bursary from the National Department of Health for enrolling and completing this degree.

Last, but not least, to my dear husband, Graeme Sayer, thank you for your support, patience and understanding throughout this incredible journey. I would not have done this without you.

Table of Contents

Abstract.....	iii
Acknowledgements.....	v
Acronyms	x
Definitions.....	xi
Chapter 1: Introduction, Aims and Objectives and Literature Review	1
1.1 Introduction	1
1.2 Aims and Objectives.....	3
1.3 Literature Review.....	4
1.3.1 Socio-demographic Factors and Alcohol use among Youth	4
1.3.2 Youth exposure to alcohol advertisements and alcohol use.....	7
1.3.3 Alcohol advertising on television	8
1.4 Statement of the Problem	9
1.5 Justification of the Study	10
Chapter 2: Methodology.....	11
2. 1. Study Design.....	11
2.2 Study site.....	12
2.3 Study Population.....	12
2.4 Study Sample	12
2.5. Data Collection.....	13
2.6. Measurement and Data sources.....	13
2.7 Data Processing Methods and Data Analysis.....	15
2.8. Ethics.....	16
Chapter 3: Results	17
3.1 Characteristics of all participants and those that have ever drunk alcohol	17
3.2 Overall Television Viewership.....	19
3.3 Frequency of television viewership	19
3.4 Socio–demographic characteristics and having ever drunk	20
3.5 Frequency of television viewership and having ever drunk	22
3.6 Socio-demographic characteristics and binge drinking.....	24
3.7 Frequency of television viewing and binge drinking	25
3.8 Socio-demographic characteristics and problem drinking	26
3.9 Frequency of television viewing and problem drinking	28

3.10. Alcohol advertisements on television.....	30
3.11 Overview of Alcohol advertisements, high frequency viewers and drinking patterns	31
3.12 Overview of study findings	32
Chapter 4: Discussion.....	33
4.1 Prevalence of drinking patterns.....	33
4.1.1 Ever drunk.....	33
4.1.2 Binge drinking	34
4.1.3 Problem drinking.....	34
4.2 Male gender and alcohol use.....	35
4.3 Age and Alcohol Use	36
4.4 Education and Alcohol use.....	36
4.5 Employment and Alcohol use	37
4.6 Residence and alcohol use.....	37
4.7 Socioeconomic status and alcohol use	37
4.8 Race and alcohol use.....	38
4.9 Alcohol Advertising on television	39
4.10 Alcohol advertisements on television and drinking patterns of youth	39
4.11 Limitations.....	42
Chapter 5: Recommendations and Conclusion	44
5.1 Youth most affected by alcohol use	44
5.2 Alcohol advertising and youth drinking patterns	46
5.3 Recommendations	46
5.3.1 Alcohol Advertising Restrictions	46
5.3.2 A multi-level response and social determinants of health.....	48
5.4 Further Research.....	49
5.5 Conclusion.....	49
Appendix A.....	51
Appendix B: NCS: Section of Questionnaire: Alcohol and Television Exposure	52
Appendix C: Human Research Ethics Committee Approval: National Communication Survey (NCS).....	59
Appendix D: Human Research Ethics Committee Approval: Present Study.....	60
References	61

List of Tables

Table 1: Socio demographic characteristics of young men and women aged 16 – 24 years in South Africa, overall and those who have ever drunk	18
Table 2: Overall Television viewership among youth per channel and sex.....	19
Table 3: Frequency of viewing television among youth per channel and sex.....	20
Table 4: Socio-demographics and ever having drunk alcohol among males and females (16 – 24 years).....	22
Table 5: Frequency of television viewing and ever having drunk alcohol among males and females (16 – 24 years).....	23
Table 6: Socio demographics and binge drinking among males and females (16 – 24 years)	25
Table 7: Frequency of television viewing and binge drinking among males (16 – 24 years) .	26
Table 8: Socio-demographics and problem drinking among males and females (16 – 24 years).....	28
Table 9: Frequency of television viewing and problem drinking among males and females (16 – 24 years).....	29
Table 10: Alcohol advertisements per Television Channel.....	31
Table 11: Alcohol advertisements per Television Channel and high frequency viewers and drinking patterns.....	31
Table 12: Alcohol use trends.....	33

List of Figures

Figure 1: Number of alcohol advertisements by week, on four South African national television channels (SABC1, SABC2, SABC3 and e.TV) between 1 February 2012 and 31 May 2012	30
---	----

Acronyms

AUDIT	Alcohol use Disorder Identification Test
HiAP	Health in all Policies
HREC	Human Research Ethics Committee
NCS	National Communication Survey
MAMPA	Monitoring Alcohol Marketing Practices in Africa
SABC	South African Broadcasting Corporation
SABSSM	South African National HIV, prevalence Behaviour and Communication Survey
SBCC	Social and Behavioural Change Communication
SES	Socio Economic Status
TV	Television
WHO	World Health Organization
YRBS	Youth Risk Behaviour Survey

Definitions

- **Youth:** defined as youth in the age category of 16 – 24 years, in this study.
- **Harmful use of alcohol:** defined as drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes (World Health Organization, 2010a).
- **Binge drinking:** defined as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 grams percent or above, when men consume five or more drinks and when women consume four or more drinks, in about two hours (Centres for Disease Control and Prevention, 2012).
- **Problem drinking:** This is measured using the CAGE audit screening test. CAGE is an acronym of four questions, originally developed to detect life-time alcohol dependence:
 - Have you ever felt that you should Cut down on your drinking?
 - Have people Annoyed you by criticizing your drinking?
 - Have you ever felt bad or Guilty about your drinking?
 - Have you ever had a drink first thing in the morning (an Eye Opener) to steady your nerves or to get rid of a hangover?

A score of two or more yes responses is used to indicate problem drinking (Ewing, 1984).

- **KISH Grid method:** defined as a selection table / grid used in survey research to ensure equal chance of selection where interviewers with a sample of households can sample individuals by following simple rules for selecting one person to interview from among household residents. The technique involves constructing a list of eligible individuals at a particular address, ordered by age, and then selecting according to the serial number of the address itself (<http://www.encyclopedia.com/doc/1088-kishgrid.html>).
- **Health in All Policies Approach (HiAP):** an approach to public policies across sectors that systematically takes into account the health and health systems implications of decisions, seeks synergies, and avoids harmful health impacts, in order to improve population health and health equity. The approach founded on health-related rights

and obligations and emphasizes the consequences of public policies on health determinants which aim to improve the accountability of policy-makers for health impacts at all levels of policy-making (Leppo et al., 2013).

Chapter 1: Introduction, Aims and Objectives and Literature Review

This chapter provides an overview of alcohol use and the patterns of alcohol use by youth, with a particular focus on exposure to alcohol advertising and harmful alcohol use, both globally and in South Africa. Youth are vulnerable to exposure to alcohol advertisements, which are aggressively distributed through various mass media channels by the alcohol industry. In South Africa, this includes print and the electronic media with a particular focus on the use of television. The aims and objectives of the study are provided and the literature review describes studies of the socio-demographic characteristics and drinking patterns of youth and what is known about exposure to alcohol advertisements and drinking patterns. The chapter ends with a problem statement and justification of the study.

1.1 Introduction

The harmful use of alcohol is a major public health concern. According to the World Health Organization (WHO) Global Status Report on Alcohol and Health (2014), the harmful use of alcohol is a component cause of more than 200 disease and injury conditions in individuals, alcohol dependence, liver cirrhosis, cancers and injuries (World Health Organization, 2014).

In 2012, about 3.3 million deaths, or 5.9% of all global deaths, were attributable to alcohol consumption (World Health Organization, 2014). Lower socio-economic status and educational levels result in greater risk of alcohol related death, disease and injury (World Health Organization, 2011). The harmful use of alcohol is already a risk factor for death among males aged 15–59 and drinking patterns such as drinking to intoxication and binge drinking seem to be on the rise among adolescents and young adults of both sexes (World Health Organization, 2011).

Drinking patterns in South Africa are of concern. The level of adult, per capita, absolute alcohol consumption in South Africa was estimated at 10.3 litres per year (Rehm et al., 2004). Although this was substantially less than many countries, the amount consumed per drinker in South Africa is closer to 20 litre per adult, and is among the highest in the world (Rehm et al., 2004). Nationally, 49.2% of learners had

drunk one or more drinks of alcohol (e.g. a beer, a glass of wine, or a 'tot' of brandy) in their lifetime, with significantly more males (53.8%) than female (44.9%) learners consuming alcohol (Omaridien et al., 2013). The same study found that 12.4% of learners reported having the first drink before the age of 13 years. Early alcohol initiation remains a concern and binge drinking is increasing, especially among females (Ramsoomar and Morojele, 2012).

A programme in 2003 reported that the harmful use of alcohol, which had implications for violence, transport-related accidents and fatalities, homicide, suicide and unintentional deaths, was on the rise (Medical Research Council of South Africa, 2003). Binge drinking, especially among men was reported to be among the highest globally (World Health Organization, 2011). This was supported by a study in South Africa by Peltzer and colleagues that showed an increase for current, binge and harmful drinking from 2003 to 2008 (Peltzer et al., 2011). This study drew on the South African National HIV, Incidence, Behaviour and Communication (SABSSM) 2008 survey, which included questions that assessed the extent of alcohol use and problem drinking among South Africans aged 15 or older. The same study reported significant increases in drinking patterns for ages 15 years and older, from 2005 to 2008 survey as follows: currently (past month) alcohol use increased from 24.5% to 27.7%; binge drinking from 7.4% to 9.6%; and harmful alcohol use from 6.2% to 9.0% (Peltzer et al., 2011).

In May 2010, the World Health Assembly (WHA) endorsed the global strategy to reduce the harmful use of alcohol. This WHO Global Strategy on Alcohol identifies harmful alcohol use and the amount of exposure to alcohol marketing among young people, especially in the low and middle income countries (LMIC), as a major concern (World Health Organization, 2010a). The strategy provides guidance to WHO member states to set priorities for global action and makes recommendations for policy options and measures, which includes addressing the marketing of alcoholic beverages. The strategy calls for strong regulation of the various forms of advertising and marketing and for the protection of young people against these marketing initiatives (World Health Organization, 2010a). This call is also reiterated in the WHO

African regional strategy on alcohol, which also calls for the implementation of effective systems to deter and regulate the marketing and the promotion of alcohol (World Health Organization, 2010b). The WHO aim to reduce the harmful use of alcohol can be partially achieved by reducing the impact of marketing, particularly to young people and adolescents (World Health Organization, 2010a).

Considerations to place restrictions on alcohol advertising in South Africa were initiated in 1997 as part of a policy initiative to reduce the harmful impact of alcohol, but this was delayed and 12 years later, regulations pertaining only to the labelling of alcohol products were legislated (Parry, 2010). There is no total ban on alcohol advertising in South Africa. Amendments to the national liquor policy (Notice No.466 of 2015) were gazetted by the Department of Trade and Industry for public comment in May 2015 (Ministry of Trade and Industry, 2015). This document outlines the policy proposals intended to amend the current Liquor Act, 59 of 2003 and makes recommendations on the restrictions and parameters for advertising and marketing of liquor products that are aligned to the draft Bill on the Control of Marketing of Alcoholic Beverages (Ministry of Trade and Industry, 2015). In light of this, there has been strong resistance to this initiative voiced by various organisations in the media, like the Free Market Foundation, the South African Chamber of Commerce and Industry (Sacci) and the alcohol Industry through the Association for Responsible Alcohol use (ARA), citing the loss of personal freedom, loss of jobs, loss in tax revenue and the loss of sponsorship for sports teams, charities and the arts (Sapa, 2013 , Business Day, 2013, Fin. 24 and News., 2013)

1.2 Aims and Objectives

The overall aim of this study was to explore youth exposure to alcohol advertising on four national television channels in South Africa and their harmful use of alcohol for the period 1 February and 31 May, 2012.

The specific objectives of the study were:

- To describe the socio-demographic characteristics of youth aged 16 – 24 years and their alcohol drinking patterns, namely:
 - youth who had never drunk alcohol;

- youth who had ever drunk alcohol;
 - youth who engaged in binge drinking; and
 - youth who had problem drinking behaviour.
- To describe the exposure of youth aged 16 -24 years to the four national television channels (SABC1, SABC2, SABC3 and e.TV) in South Africa, for the period 1 February and 31 May, 2012;
 - To determine the association between exposure of youth aged 16 -24 years to the four national television channels (SABC1, SABC2, SABC3 and e.TV) and their drinking patterns in South Africa for the period 1 February and 31 May, 2012; and,
 - To describe the alcohol advertisements that were flighted on the four national television channels (SABC1, SABC2, SABC3 and e.TV) between 1 February and 31 May 2012.

1.3 Literature Review

The WHO global strategy to reduce the harmful use of alcohol states that alcohol is marketed through increasingly sophisticated advertising and promotion techniques, including linking alcohol brands to sports and cultural activities, sponsorships and product placements and emails, Short Message Service (SMS), social media, television and the internet (World Health Organization, 2010a). Reducing the impact of this marketing, particularly on young people and adolescents, is an important consideration in reducing the harmful use of alcohol (World Health Organization, 2010a). A ban on alcohol advertising is one of many cost effective ways to reduce the harm caused by alcohol on young people and adolescents (Anderson et al., 2009b, Parry et al., 2012, World Health Organization, 2010a).

1.3.1 Socio-demographic Factors and Alcohol use among Youth

The degree of risk for harmful use of alcohol varies with age, sex, biological and socio-demographic characteristics of the consumer, the setting and the context in which the drinking takes place (World Health Organization, 2010a). Numerous studies have found associations between socio-demographic factors and drinking patterns among youth. This review first presents unmodifiable factors (sex, age and

race) followed by socio-demographic characteristics that can be impacted through interventions (employment, education, SES, and place of residence).

Sex, age and race have all been associated with alcohol use patterns. Global and national trends show that being male is associated with the higher frequency of alcohol use, binge drinking and alcohol use disorders (World Health Organization, 2011, Ramsoomar and Morojele, 2012). Other studies in South Africa show the same, with more male than female youth having ever drunk and binge drinking (Reddy et al., 2010, Van Heerden et al., 2009, Onya et al., 2012, Flisher et al., 1993, Omardien et al., 2013). This pattern is not unique to South Africa, with similar findings in other middle-income countries, such as Brazil, however, that study focused on binge drinking only and a wider age range of 18 – 44 years (Castroanda et al., 2012). Similar findings were also reported in a study when the pattern of gender differences in drinking was examined in 29 countries (Rahav et al., 2006). As might be expected, studies in South Africa also report an association between age and alcohol use, with older youth in the age category 20 – 24 years having ever drunk and having engaged in harmful alcohol use as compared with younger youth (Peltzer et al., 2011, Peltzer and Ramlagan, 2009).

Race also is associated with alcohol use among youth in South Africa. Several studies report that the Coloured population in South Africa is more likely than other population groups to have used alcohol and are more vulnerable to harmful alcohol use (Myers et al., 2013, Peltzer et al., 2011, Peltzer and Ramlagan, 2009, Van Heerden et al., 2009).

An association between education and alcohol use is also reported in various studies in South Africa. A systematic review of national surveys by Peltzer and Ramlagan (2009) reported that in both the Demographic and Health Surveys (DHS) of 1998 and SABSSM II survey of 2005, lower levels of education were associated with higher levels of binge drinking among current drinkers when compared to those that had more education. In the same review, Peltzer and Ramlagan (2009) found that the local surveys seem to indicate higher levels of harmful alcohol use than the national

surveys, especially among university students who had higher prevalence for current alcohol use, binge drinking and harmful drinking. These university students were therefore at greater risk of developing alcohol related problems (Peltzer and Ramlagan, 2009). Another earlier and smaller study of students at one South African university also found that that excessive alcohol consumption, especially binge drinking amongst students, was a public health concern and was likely to result in serious medical and social consequences (Young and De Klerk, 2008). Similar findings were reported from a study conducted in neighbouring Botswana, which found that higher education was associated with heavy alcohol use, especially amongst women (Weiser et al., 2006).

Literature on the relationships between employment and SES and alcohol use patterns is less clear. Employment status is associated with alcohol use, although the directionality remains unclear. A review by Setlalentoa et al., (2010) found that social and economic changes that result from urbanisation lead to harmful alcohol use among South Africans. This review further cites that negative work experiences can lead to problem drinking and that harmful alcohol use can also lead to unemployment (Setlalentoa et al., 2010). Similarly, the SES of youth is associated with alcohol use, but in inconsistent ways. A study in Brazil reported that men (aged 18 – 24) with higher income are likely to engage in binge drinking (Castroanda et al., 2012) and similar findings were reported from a national population based study conducted in South Africa, although the age range was broader (15 years and older) (Peltzer et al., 2011). The same study by Peltzer and colleagues (2011) also reported that women with high income are protected from hazardous or harmful drinking and those women with lower SES were more likely to abstain from alcohol or are non-current drinkers.

The physical locality in which youth reside has been associated with alcohol use in some instances. A systematic review of studies in South Africa reported that youth who have ever drunk, binge and problem drink live predominantly in urban areas (Peltzer and Ramlagan, 2009). However, a study by Peer and colleagues (2013) did not find an overall significant urban rural difference in the odds for problem drinking.

However, they found that among females, the odds of problem drinking were higher in urban compared to rural females (Peer et al., 2013).

1.3.2 Youth exposure to alcohol advertisements and alcohol use

Various studies have shown an association between exposure to alcohol advertising and alcohol use among youth. A systematic review of eight global studies published between 2009 and 2013 in United States of America, United Kingdom, Australia, Germany and Brazil, on the effects of alcohol advertising on adolescents showed that there are significant associations between exposure to different types of alcohol advertising and initiation of alcohol use, with possible progression to binge drinking among adolescents (Mngadi and Senkubuge, 2014). This review reinforces the findings of an earlier systematic review by Smith and Foxcroft (2009) that showed associations between exposure to alcohol advertising and drinking behaviour. Other studies not included in the Smith and Foxcroft review also show that there is an association between exposure to alcohol advertising and alcohol consumption (Grube and Wallack, 1994, Anderson et al., 2009a). Further studies with similar findings include a longitudinal study among German students that reported that alcohol use initiation and binge drinking were positively associated with baseline alcohol advertisement exposure (Morgenstern et al., 2011); a cross-sectional study among secondary school youth in Scotland suggesting that the cumulative effect of alcohol marketing influences youth drinking in the United Kingdom (Gordon et al., 2011); and a study among secondary school youth, in one county in Kenya that found an association between alcohol marketing and youth drinking behaviour (Anyange, 2014).

The age of initiating drinking of alcohol among youth is also associated with exposure to alcohol advertisements. The review by Smith and Foxcroft (2009) reported an association between exposure to alcohol advertising and the age of drinking. They reported that an increased awareness of alcohol messages amongst young people leads to earlier drinking, higher consumption and increased harm and they recommended stronger marketing regulation (Smith and Foxcroft, 2009). Included in the review was a study of young New Zealand males by Connolly et al.,

(1994), which found that commercial alcohol advertising (by predominantly beer companies) to younger youth was related to beer consumption when youth were older, indicating an earlier onset of drinking among youth (Smith and Foxcroft, 2009). Another study in the United States also found that alcohol advertising may predispose young people to drinking (Grube and Wallack, 1994).

Levels of exposure are also important. The review by Smith and Foxcroft (2009) found an association between the level of overall alcohol advertisements exposure (dose) and subsequent alcohol consumption among young people. Three of the studies they reviewed showed that the onset of drinking in adolescent non-drinkers was significantly associated with exposure to alcohol advertising, and that for each additional hour of television viewing per day, the risk of starting to drink increased during the following 18 month. The findings of this review are supported by a study of Australian teenagers (13-17 years) that found exposure to unacceptably high levels of alcohol advertising on television directly influenced their subsequent alcohol use; the study further suggested that the alcohol industry may be deliberately targeting underage adolescents (Winter et al., 2008).

1.3.3 Alcohol advertising on television

Various studies provide insight into the volume of alcohol advertising. A study on Monitoring Alcohol Marketing Practices in Africa (MAMPA) was conducted in four Sub-Saharan African countries: Gambia, Ghana, Nigeria and Uganda (De Bruijn, 2011). This study found that except for Gambia, the alcohol industry had great freedom in placing large volumes of alcohol advertising in the main media, due to limited or absent regulatory frameworks for alcohol advertising and that these countries relied on self-regulation by the alcohol industry. The size, frequency and placement of alcohol advertisements was aimed at reaching large audiences (adults and minors) through the use of a combination of marketing strategies that included advertising in the main media, on the streets and the sponsorship of cultural and sport events (De Bruijn, 2011). This study also reported that in Gambia the alcohol marketing practices were less prevalent and aggressive due to having a regulatory framework.

The volume of alcohol advertisements were also reported in a study conducted in the United States by Chung et al., (2010). This study documented an association between alcohol-advertisement exposure on cable television and adolescent viewership and found that across the vast majority of time slots, adolescent viewers, especially girls, were exposed to more beer, spirits, and alcopop advertisements on cable television than would be expected through incidental exposure (Chung et al., 2010). A recent study on the trend and comparative analysis on alcohol advertising in South Africa by Van Walbeek and Daly (2014) showed that the total alcohol advertising expenditure increased from around R550 million per year between 1997 and 2003, to more than R1.7 billion in 2011 and 2012 which is expressed in December 2012 prices (Van Walbeek and Daly, 2014). The same study found that youth spend more time watching television than reading newspapers and magazines, which makes television a particularly powerful communication medium for alcohol advertisements by the alcohol industry (Van Walbeek and Daly, 2014).

1.4 Statement of the Problem

Harmful alcohol use among youth and their exposure to alcohol marketing and promotion is of concern globally and in South Africa. Studies conducted previously indicated an increasing trend in the prevalence of drinking among youth in South Africa (Parry, 2005a). National policy change and regulations to place restrictions on alcohol advertising in South Africa are still awaited. In the meantime, youth are vulnerable and exposed to alcohol marketing and promotion in the electronic, print and social media. The South African government has published amendments to the national alcohol policy, which includes restrictions on alcohol marketing and advertising (Ministry of Trade and Industry, 2015). However, restrictions on alcohol advertising and promotion are not being given priority. It is important that the amendments that are to be made in the national policy on restrictions on the marketing and advertising of alcohol are based on South African evidence.

1.5 Justification of the Study

In South Africa there is slow pace in policy action and there is a need to include tougher restrictions on the marketing and promotion of alcohol, especially to adolescents and young adults, despite the alcohol liquor industry's argument that self-regulation is sufficient (Parry, 2010). Whilst there is evidence from elsewhere in the world to support the restriction of alcohol advertising and sponsorship, evidence is limited in South Africa and needs to be strengthened. There is a need for local data in South Africa and to explore whether exposure to alcohol advertisements are associated with drinking patterns among youth. Such information would contribute to discussions about whether restrictions on the marketing of alcohol through advertising could reduce alcohol related harm, especially among South African youth. This present study sought to strengthen the body of evidence specific to the South African context, by exploring associations between alcohol advertising on national television channels and alcohol consumption among youth.

Chapter 2: Methodology

2. 1. Study Design

This is a secondary data analysis study that used a subset of the data that were collected in the primary National Communication Survey (NCS) study. Specifically, this study analysed data on alcohol use in 16 – 24 year old respondents and youth viewership of four national television channels - SABC1, SABC2, SABC3 and e.TV. This study aimed to explore youth exposure to alcohol advertising on four national television channels and their alcohol use patterns in South Africa, for the period 1 February and 31 May, 2012. New categories and variables were created using the data from the NCS, to meet the study objectives for the present study.

A cross-sectional study design was used in the primary study to collect data for the third NCS between 1 February and 31 May, 2012. The NCS aimed to measure the key characteristics of respondents which might influence receptivity to HIV communication, exposure to various HIV campaigns, risk behaviours and care and support behaviours (Health and Development Africa, 2011). Although the main aim of the NCS was not to investigate television viewership and alcohol drinking patterns among youth, several socio-demographic, alcohol use and television viewership related questions were included in questionnaire.

Since the NCS did not contain data that directly measured alcohol advertisement exposure, television viewership was used as a proxy measure. To test the assumption that television viewership was a suitable proxy for television advertisement exposure, a dataset for the period 1 February to 31 May, 2012 from one media monitoring agency, namely, Nielsen South Africa was used to describe the alcohol advertisement placements during this period (Nielsen, 2014). These additional data were used by the researcher to describe the concentration of alcohol advertisements flighted on the four national television channels (SABC1, SABC 2, SABC 3 and e.TV) during the period in which the primary study was undertaken.

2.2 Study site

The NCS was a national, population based household survey and the data from Nielsen South Africa were based on the television channels that were broadcast nationally.

2.3 Study Population

For the NCS, the population was household residents, aged between 16 and 55 years, who spend four or more nights at the household for most days of the year. However, for this present study, the population of interest was youth (male and female) aged 16 to 24 only.

The data from Nielsen South Africa included all alcohol advertisements flighted on the four national channels during the same period in which the NCS television viewership data were collected.

2.4 Study Sample

The study sample of the NCS consisted of households within electoral wards. These electoral wards were geographical and political demarcated subdivisions of municipal areas that were used for electoral purposes, within South Africa. The electoral wards were the primary sampling units and households were sampled within these wards in each of the nine provinces in South Africa (Health and Development Africa, 2011). The NCS sampling frame was a list of 3971 electoral wards in South Africa, which served as the primary sampling units. The country was stratified into nine provinces and a multi-stage, cluster sampling approach was used to draw a sample of 400 primary sampling units out of the total number of 3971 wards (Health and Development Africa, 2011). Households were sampled at random from each of the sampled wards, with the number of households included in a ward being proportional to the population size of the ward. On average, 25 households were included in each sampled ward, using a random walk method to select the actual household, in order to reach the sample size of 10 000 households. The KISH Grid method was used to randomly select one eligible respondent per household (Health and Development Africa, 2011). A total of 10 034 interviews were completed, with an overall response rate of 83%. The study sample for the present

study was restricted to a subset of data for youth aged 16 – 24 years, which totalled 3399 and variables related to their socio-demographic characteristics; alcohol use; and television viewership.

In addition, a subset of data from Nielsen South Africa (restricted to the data collection period of the NCS, from 1 February to 31 May, 2012) on television alcohol advertisements on the four national television channels was used. The four national television channels were selected because the majority of the South African population have access to these channels only. Data from cable television channels, e.g. DSTV and TOPTV, were excluded from the study given that these stations had lower national viewership.

2.5. Data Collection

Data in the NCS study were collected using a structured questionnaire which was piloted and then translated from English into the other 10 official South African languages. The questionnaire was administered face to face by trained fieldworkers, with the informed, written consent and parental consent if the respondent was under 18 years old (Health and Development Africa, 2011). The dataset from Nielsen South Africa was specially commissioned for this study and was provided as per specifications stipulated by the researcher.

2.6. Measurement and Data sources

The questionnaire in the NCS was designed to gather information on key characteristics of respondents which influenced receptivity to HIV communication, exposure to various HIV campaigns, risk behaviours and care and support behaviours (Health and Development Africa, 2011). Appendix A includes the original formulation of questions from which the variables for the present study were derived. The sections of the questionnaire that was used for the present study are included as Appendix A. The full questionnaire can be obtained from the researcher, upon request.

Data for the present study were extracted from the NCS responses that pertained to socio-demographic characteristics, namely, sex, age, education, employment, type of

residence (urban / rural), SES, food security and race; patterns of alcohol use (never having drunk, ever having drunk, binge drinking and problem drinking); and viewership of television and frequency of television viewership.

New socio-demographic exposure or independent variables were created and some existing independent variables from the NCS were used in the present study. The following independent variables were created specifically for this study:

- **Age** was treated as a categorical variable, split between 16 – 19 years and 20 – 24 years. These two age categories provide information on the most impactful years among youth, when most vulnerable to alcohol use.
- **Education** was restricted to three levels for the present study: no schooling to primary schooling; post primary schooling; and matric to tertiary level. These levels were based on data distribution to ensure adequate numbers in each group for analysis.
- **Residential area** type was coded as urban and rural for analysis and to enable comparison with other studies.

The following existing independent variables from the primary study also were used:

- **Employment** with categories for unemployed, employed and being a student;
- A **Socioeconomic status (SES)** scale, consisting of seven items (microwave oven, flush toilet, washing machine, kitchen sink, water in home, electricity and motor vehicle) derived from South Africa's Living Standard Measure (LSM), with a reported Chronbach's alpha of (0.82), was used. The scale, which had already been split into three categorical variables (Low, Medium and High), was used for this secondary analysis.
- **Food security**, where responses of "often" and "sometimes" to the question of how often the respondent had gone without enough food to eat in the past 12 months, was categorised as being food insecure (versus secure).

Four outcome or dependent variables were used in the present study:

- **Never drinking**, defined as never having had an alcoholic drink;
- **Ever having drunk**, defined as "Yes" having ever had an alcoholic drink.

- **Binge drinking**, which was analysed separately by gender, with five or more drinks on one occasion constituting binge drinking for males, with four or more drinks on one occasion being binge drinking for females.
- **Problem drinking:** The CAGE audit screening test was used to identify problem drinking in males and females, with a score of two or more “Yes” responses to the four CASE questions used to indicate problem drinking (Ewing, 1984).

In terms of television exposure, viewership and frequency variables were analysed from the NCS.

- **Viewership** was analysed as a dichotomous variable (Yes/No) overall and also by **Channel** (SABC1, SABC2, SABC3, and eTV)
- **Frequency of television viewership**, was also analysed overall and by channel according to three independent categories:
 - Low: never watched television, or watched less than once a week;
 - Medium: watched television one to three days a week; and
 - High: watched television four to seven days a week.

Data from Nielsen South Africa were explored to show the concentration of alcohol advertisements per television channel (i.e. the number and proportion of advertisements on alcohol flighted on SABC1, SABC2, SABC3, e.TV during the period in which the NCS was undertaken). These data were treated as continuous variables.

2.7 Data Processing Methods and Data Analysis

In the secondary data analysis, the data from the NCS were restricted to the desired age group (16 -24), extracted and the cleaned dataset was used in the analysis.

These data and the dataset from Nielsen South Africa were checked for incongruent values, missing data, and errors using STATA (Version12.0). Data were explored and displayed graphically to look for outliers. The researcher consulted with the senior researcher of the NCS study and the Nielsen South Africa contact person to clarify any missing / incongruent data. There was a pre-determined limit of no more than 10% missing data allowed for inclusion in the analysis, although this did not need to

be applied. As described in 2.6, some variables were re-coded so that all the variables were based on the same units and in line with the study objectives. STATA 12.0 software was used to analyse the data. The data on advertisements that were broadcasted on television was purchased from Nielsen South Africa and explored in Microsoft Excel. This dataset from Nielsen South Africa was not merged with the dataset from the NCS. The data were described and summarized using counts and percentages. The data are displayed in tables in the Results chapter. The chi-square test was used to test associations between the categorical outcomes, e.g. ever having drunk, binge drinking and problem drinking, and other variables, e.g. socio-demographic characteristics and television viewership. These are reported using tables and p-values at the 95% confidence level, also presented in the Results chapter.

2.8. Ethics

The primary study (NCS) received ethical approval from the University of Witwatersrand Human Research Ethic Committee (HREC - Appendix B); HREC Non Medical, Protocol Number: H110701). Several ethical issues were considered which included informed consent, voluntary participation, confidentiality and anonymity of respondents. The researcher obtained approval from the University of Witwatersrand HREC for analysis of the de-identified dataset of the NCS and is attached as Appendix C; (Human Research Ethics Committee (Medical) Clearance No. M140471). The dataset from Nielsen South Africa was purchased, hence no letter to obtain permission to use this dataset is attached. The data from the secondary study is stored on the researcher's personal computer, which is password protected and will be kept for two years post this study after publishing or six years if not published. Only, the researcher and the supervisors have access to this dataset.

Chapter 3: Results

The overall aim of this study was to examine factors that influence the use of alcohol among youth aged 16 – 24 years in South Africa for a three month period (February 2012 to May 2012) and in particular to assess the role of alcohol advertisements flighted on television. In this chapter, results on the following are presented: socio-demographic characteristics of the youth; preference of television channel viewership; frequency of television viewership; patterns of alcohol use; alcohol use patterns in relation to television viewership and television alcohol advertisement placement, using descriptive statistics and tests of association. The following three drinking patterns of youth are described in relation to television viewership: having ever drunk alcohol, binge drinking and problem drinking.

3.1 Characteristics of all participants and those that have ever drunk alcohol

The distribution of the NCS youth sample is summarised and compared to the sample who had ever drunk in Table 1. Of note, is a slight overrepresentation of females (56.6%); more than half of the youth (60.7%) were in the older age category of 20 -24 years; just under half of the youth (45.5%) were unemployed and the majority were urban-dwellers, had food security and were from the Black population group (65.6%, 83.9% and 84.4% respectively).

In the overall sample (n= 3399), over a third (34.0%) of youth reported ever having drunk. Some of the most marked differences between the sample distribution and having ever drunk were by education, employment, socio economic status, food security and race. While 4.9% of the respondents in the overall sample had no school to primary education, those who reported ever having drunk were overrepresented (34.1% versus 4.9%). Employed youth who reported ever having drunk were also overrepresented (48.8% versus 13.5% in the overall sample). Similarly, those youth with high socio economic status who reported ever having drunk were overrepresented (39.9% versus 32.8% of the overall sample). Of note is that the youth with food insecurity that reported having ever drunk outnumbered those in

the overall sample (33.0% versus 16.1%). In terms of the racial groups, while the majority (84.4%) of the respondents in the overall sample were Black they were underrepresented in the ever having drunk distribution. Conversely, youth from the other race groups, who reported having ever drunk were overrepresented, with a marked difference among the Coloured youth (51.1% versus 12.8% of the overall sample).

Table 1: Socio demographic characteristics of young men and women aged 16 – 24 years in South Africa, overall and those who have ever drunk

CHARACTERISTICS	ALL YOUTH		THOSE WHO HAVE EVER DRUNK	
	NUMBER	(%)	NUMBER	(%)
Sex (n=3399)				
Female	1922	56.5	516/1922	26.8
Male	1477	43.5	642/1477	43.5
Age (n=3399)				
16-19	1336	39.3	340/1336	25.4
20-24	2063	60.7	818/2063	39.6
Education (n= 3393)				
No schooling to primary	167	4.9	57/167	34.1
Post primary to grade 11	1615	47.6	484/1615	30.0
Matric to tertiary	1611	47.5	614/1611	38.1
Employment (n=3351)				
Unemployed	1523	45.5	583/1523	38.3
Employed	451	13.5	202/451	48.8
Student	1377	41.0	362/1377	26.3
Residence (n=3399)				
Rural	1170	34.4	309/1170	26.4
Urban	2229	65.6	849/2229	38.1
Socioeconomic status (n=3399)				
High	1116	32.8	445/1116	39.9
Medium	1287	37.9	457/1287	35.5
Low	996	29.3	256/996	25.7
Food Security (n=3399)				
Food Insecure	546	16.1	180/546	33.0
Food Secure	2853	83.9	978/2853	34.3
Race (n=3396)				
Black	2867	84.4	906/2867	31.6
Coloured	436	12.8	223/436	51.1
White	34	1.0	15/34	44.1
Indian	59	1.7	14/59	23.7

3.2 Overall Television Viewership

As is seen in Table 2, the majority of youth (80.7%) reported watching television during the reporting period. When looking at specific channels, SABC1 was the most popular channel, with 94.7% of those who watched television reported having watched this channel, followed by e.TV (89.5%), SABC2 (88.7%) and SABC3 (80.2%). Gender was generally not associated with specific television channel viewership, with the exception of SABC2, where significantly more females (91.3%) watched television than males (85.2%), (p=0.001).

Table 2: Overall Television viewership among youth per channel and sex

TELEVISION STATIONS	OVERALL	MALE (%)	FEMALE (%)	P-VALUE
Any TV (n=3397)				0.811
No	19.3	19.5	19.2	
Yes	80.7	80.5	80.8	
SABC 1 (n=2745)				0.161
No	5.3	6	4.8	
Yes	94.7	94	95.2	
SABC 2 (n=2745)				0.001
No	11.3	14.8	8.7	
Yes	88.7	85.2	91.3	
SABC 3 (n=2745)				0.131
No	19.8	21.1	18.8	
Yes	80.2	78.9	81.2	
e-TV (n= 2745)				0.244
No	10.5	9.8	11.1	
Yes	89.5	90.3	88.9	

3.3 Frequency of television viewership

As is seen in Table 3, the majority of youth reported a high frequency (60.0%) of television viewing during the reporting period, where high frequency was defined as watching television four to seven days in a week. The channels with the highest frequency of viewership were SABC 1, followed by e.TV, SABC2 and SABC3.

Sex was significantly associated with high frequency viewership of all four television channels. The females watched television more frequently than males for all television channels with statistically significant differences for all three SABC channels.

Table 3: Frequency of viewing television among youth per channel and sex

FREQUENCY	OVERALL	MALE	FEMALE	P-VALUE
ANY TV(N=3397)				0.085
No/Low	19.3	19.5	19.2	
Medium	20.7	22.4	19.5	
High	60.0	58.1	61.3	
SABC 1 (n=2745)				0.011
No/Low	5.3	6.0	4.8	
Medium	29.9	32.3	28.0	
High	64.8	61.7	67.2	
SABC 2 (n=2745)				0.001
No/Low	11.3	14.8	8.7	
Medium	36.2	40.2	33.2	
High	52.5	45.0	58.1	
SABC 3 (n=2745)				0.001
No/Low	19.8	21.1	18.8	
Medium	38.5	43.5	34.8	
High	41.7	35.4	46.6	
e-TV (n=2745)				0.085
No/Low	10.5	9.7	11.1	
Medium	30.2	32.3	28.6	
High	59.3	58.0	60.3	

**** High: watched television four to seven days a week.

Medium: watched television one to three days a week.

No/Low: never watched television or watched television less than once a week.

3.4 Socio-demographic characteristics and having ever drunk

The study found that the prevalence for those who have ever drunk in the total sample was 34.9% and the prevalence for male and female youth who had ever drunk was 44.7% and 27.5% respectively. Other than food security, all the socio-demographic characteristics were associated with youth having ever drunk.

Similar patterns were observed among males and females who had ever drunk and age, employment, residential setting (urban versus rural) and food security. Age was significantly associated with youth who had ever drunk, with the greater proportion of males and females (72.9% and 67.8% respectively) who had ever drunk being in

the older age group (20 - 24 years). Higher educational attainment also was associated with youth who had ever drunk. Similar proportions of males (48.4%) and females (54.0%) that reported ever having drunk were unemployed. Among both sexes, students were less likely to report ever having drunk. The majority of males and females who had ever drunk lived in urban areas, with similar proportions, 71.8% and 75.2% respectively. Socio economic status was only statistically significantly associated with females who have ever drunk ($p < 0.001$). Females with low socio economic status were less likely to have ever drunk (18.4% versus 34.1% who had never drunk). The race groups also varied in association with those who had ever drunk, most markedly among the Coloured race group. The Coloured males (15.7%) and females (23.6%) who reported ever having drunk were significantly higher than those of the same race who had never drunk (9.2% and 9.6% respectively).

Table 4: Socio-demographics and ever having drunk alcohol among males and females (16 – 24 years)

CHARACTERISTICS (n=male/female)	HAVE EVER DRUNK ALCOHOL					
	MALE			FEMALE		
	YES (%)	NO (5)	P VALUE	YES (%)	NO (%)	P VALUE
Age (n=1438/1879)			0.001			0.001
16 – 19	27.1	51.8		32.2	40.6	
20 – 24	72.9	48.2		67.8	59.4	
Education (n=1433/1878)			0.001			0.015
No schooling to primary	5.2	5.9		4.7	3.5	
Post primary to grade 11	41.8	53.5		42.0	49.3	
Matric to tertiary	53.1	40.6		53.3	47.2	
Employment (n=1419/1854)			0.001			<0.001
Unemployed	48.4	36.1		54.0	46.1	
Employed	21.0	12.4		13.3	10.3	
Student	30.6	51.5		32.7	43.6	
Residence (n=1438/1879)			0.043			<0.001
Rural	28.2	33.2		24.8	40.6	
Urban	71.8	66.8		75.2	59.4	
Socioeconomic status (n=1438/1879)			0.067			<0.001
High	38.6	34.9		38.2	26.3	
Medium	36.3	34.6		43.4	39.6	
Low	25.1	30.5		18.4	34.1	
Food Security (n=1438/1879)			0.577			0.464
Food Insecure	15.9	14.8		15.1	16.5	
Food secure	84.1	85.2		84.9	83.5	
Race (n=1437/1878)			0.001			<0.001
Black	80.8	85.5		75.0	89.1	
Coloured	15.7	9.2		23.6	9.6	
White	1.6	0.6		1.0	0.9	
Indian	1.9	4.7		0.4	0.4	

3.5 Frequency of television viewership and having ever drunk

As is seen in Table 5, the youth (both sexes), who reported ever having drunk were significantly more likely to watch television at high frequency compared to those that did not drink ($p=0.001$ and $p<0.001$ respectively). More than half of the males (60.2%) and more than two thirds (71.1%) of the females who reported ever having drunk, watched a higher frequency of television than their non-drinking counterparts.

This same pattern was found for males and females for SABC 1 ($p=0.033$ and $p=0.010$), e.TV ($p=0.001$, for both sexes) and for females only on SABC2 ($p=0.002$). No significant differences were observed with the frequency of viewership among both sexes and ever having drunk for SABC3.

However, sex specific associations between the frequency of viewership (medium or high) and having every drunk for the other channels were less clear or even counterintuitive from the perspective of alcohol advertisement exposure. Among females, less frequent viewership of SABC 1 was associated with having ever drunk.

Table 5: Frequency of television viewing and ever having drunk alcohol among males and females (16 – 24 years)

FREQUENCY (n=male/female)	HAVE EVER DRUNK ALCOHOL					
	MALES			FEMALE		
	YES (%)	NO (%)	P VALUE	YES (%)	NO (%)	P VALUE
Any TV (n=1436/1879)			0.001			<0.001
No/Low	14.5	21.9		10.9	21.2	
Medium	25.3	20.3		18.0	20.1	
High	60.2	57.8		71.1	58.7	
SABC 1 (n=1171/1540)			0.033			0.010
No/Low	4.6	6.75		7.2	3.8	
Medium	35.7	29.4		25.1	30.0	
High	59.7	63.8		67.7	67.2	
SABC 2 (n=1171/1540)			0.246			0.002
No/Low	13.1	16.1		6.3	9.7	
Medium	39.7	40.7		28.9	35.0	
High	47.2	43.2		64.8	55.3	
SABC 3 (n=1171/1540)			0.149			0.236
No/Low	18.6	23.0		19.6	18.4	
Medium	44.1	43.2		31.5	36.0	
High	37.3	33.8		48.9	45.6	
e-TV (n=1171/1540)			0.001			0.001
No/Low	6.2	12.5		7.6	12.6	
Medium	34.6	30.6		25.9	29.7	
High	59.2	56.9		66.5	57.7	

3.6 Socio-demographic characteristics and binge drinking

The prevalence for binge drinking among youth in the total sample was 20.7% and the prevalence for binge drinking among those who ever drank was 60.5%, that is, 65.7% for males and 54.1% for females. Table 6 presents data from the subset of youth who reported ever having drunk.

As is seen in Table 6, only a few socio-demographic characteristics were associated with binge drinking in sex specific tests of association. Among these, the age of the youth was significantly associated with those who binge drink for both males and females compared to those who did not ($p=0.003$ and $p=0.042$ respectively), with a greater proportion in the older age group (20 – 24 years) who reported binge drinking compared to those who did not binge drink. Age was the only socio-demographic characteristic that was significant for females ($p=0.042$).

In addition to age, education and employment status were associated with binge drinking among the males. For education, a significant difference ($p=0.004$) was found between males at the matric to tertiary level education who binge drink (56.2%) as compared to the 47.0% of males who did not binge drink. For employment status, a significant difference ($p=0.003$) was observed among unemployed males who binge drink (51.0%) compared to those who did not binge drink (41.9%). Being a student was associated with lower binge drinking.

No significant associations were found among males and females with respect to binge drinking and residential setting, socio economic status, food security and race.

Table 6: Socio demographics and binge drinking among males and females (16 – 24 years)

CHARACTERISTICS (n=male/female)	BINGE DRINKING					
	MALES			FEMALE		
	YES (%)	NO (%)	P VALUE	YES (%)	NO (%)	P VALUE
Age (n=629/503)			0.003			0.042
16 – 19 years	23.5	34.7		28.3	36.8	
20 – 24 years	76.5	65.3		71.7	63.2	
Education (n=626/503)			0.004			0.334
No schooling to primary	6.3	2.8		4.8	4.3	
Post primary to grade 11	37.5	50.2		39.3	45.9	
Matric to tertiary	56.2	47.0		55.9	49.8	
Employment (n=625/496)			0.003			0.841
Unemployed	51.0	41.9		53.9	53.7	
Employed	22.7	18.6		14.3	12.7	
Student	26.3	39.5		31.8	33.6	
Residence (n=629/503)			0.309			0.757
Rural	29.8	25.9		25.0	23.8	
Urban	70.2	74.1		75.0	76.2	
Socioeconomic status (n=629/503)			0.338			0.160
High	39.5	36.6		39.0	36.4	
Medium	34.3	40.2		45.5	41.5	
Low	26.2	23.2		15.4	22.1	
Food security (n=629/503)			0.539			0.696
Food insecure	16.7	14.8		14.3	15.6	
Food secure	83.3	85.2		85.7	84.4	
Race (n=629/503)			0.156			0.082
Black	81.8	78.6		76.8	72.3	
Coloured	14.5	18.1		22.0	27.3	
White	2.2	0.5		1.8	0.0	
Indian	1.5	2.8		0.4	0.4	

3.7 Frequency of television viewing and binge drinking

There was one association among males, in terms of binge drinking and frequency of television viewership, as shown in Table 7. There was a significant difference (p=0.009) among males who binge drink and those who did not binge drink in terms of frequency of viewing for SABC3. A greater proportion (40.8%) of males who binge drink compared to those who did not binge drink (30.9%) watched SABC3 at a high frequency.

Table 7: Frequency of television viewing and binge drinking among males (16 – 24 years)

FREQUENCY (n=male/female)	BINGE DRINKING					
	MALES			FEMALE		
	YES (%)	NO (%)	P VALUE	YES (%)	NO (%)	P VALUE
Any TV (N=627/503)			0.281			0.150
No/Low	16.3	11.6		8.5	13.9	
Medium	25.3	26.4		18.7	16.8	
High	58.4	62.0		72.8	69.3	
SABC 1 (n=537/448)			0.627			0.304
No/Low	4.9	4.2		6.0	9.1	
Medium	34.7	38.7		27.3	22.6	
High	60.4	57.1		66.7	68.3	
SABC 2 (n=537/448)			0.110			0.332
No/Low	11.3	17.3		4.8	8.1	
Medium	39.3	39.8		29.7	26.6	
High	49.4	42.9		65.5	65.3	
SABC 3 (n=537/448)			0.009			0.139
No/Low	15.3	25.1		16.5	23.6	
Medium	43.9	44.0		30.9	30.7	
High	40.8	30.9		52.6	45.7	
e-TV (n=537/448)			0.250			0.108
No/Low	6.1	6.8		5.6	10.1	
Medium	32.7	39.3		24.1	27.6	
High	61.2	53.9		70.3	62.3	

3.8 Socio-demographic characteristics and problem drinking

The overall prevalence for problem drinking among youth in the sample was 14.0%, using the CAGE assessment measure. Among those who had ever drunk, the prevalence of problem drinking was 41.2%. It is this latter group that is presented in Table 8. By sex, the prevalence for problem drinking was 43.8% for males and 37.8% for females. As is seen in Table 8, some socio- demographic characteristics were associated with problem drinking in sex-specific tests of association.

Education, food security and race were associated with problem drinking for females only. For education, a borderline significance ($p= 0.056$) was found between females with post primary to grade 11 education who reported problem drinking (43.6%) as compared to the 40.5% of females who did not problem drink. In terms of food security, a significant difference ($p=0.044$) was found between females with food insecurity who problem drink (19.7%) as compared to the 12.9% who did not report

problem drinking. Race was associated with females who problem drink with a significant difference ($p=0.012$) between females from the Coloured population group (30.3%) who reported problem drinking as compared to the 19.1% who did not. Employment, was only associated with problem drinking for males, with a significant association between unemployment and being a problem drinker amongst males (51.8% versus 46.3% respectively $p=0.044$). For both males and females there were significant associations between socio-economic status and problem drinking, with the highest proportion of problem drinkers in the middle socio-economic strata. No significant differences were found for age or type of residence (urban /rural).

Table 8: Socio-demographics and problem drinking among males and females (16 – 24 years)

CHARACTERISTICS (n=male/female)	PROBLEM DRINKING					
	MALE			FEMALE		
	YES (%)	NO (%)	P VALUE	YES (%)	NO (%)	P VALUE
Age (n=630/497)			0.145			0.713
16 – 19 years	23.9	29.1		33.0	31.4	
20 – 24 years	76.1	70.9		67.0	68.6	
Education (n=672/497)			0.845			0.056
No schooling to primary	5.5	4.5		7.5	3.2	
Post primary to grade 11	41.2	42.5		43.6	40.5	
Matric to tertiary	53.3	53.0		48.9	56.3	
Employment (n=626/490)			0.044			0.112
Unemployed	51.8	46.3		51.9	55.7	
Employed	23.2	19.5		17.8	11.2	
Student	25.0	34.2		30.3	33.1	
Residence (n=630/497)			0.473			0.757
Rural	29.7	27.1		22.9	26.2	
Urban	70.3	72.9		77.1	73.8	
Socioeconomic status (n=630/497)			0.033			0.025
High	33.3	42.7		29.8	41.8	
Medium	41.3	32.5		50.5	40.5	
Low	25.4	24.8		19.7	17.8	
Food security (n=630/497)			0.423			0.044
Food insecure	17.0	14.7		19.7	12.9	
Food secure	83.0	85.3		80.3	87.1	
Race (n=630/497)			0.142			0.012
Black	82.6	79.1		69.2	79.0	
Coloured	15.6	16.1		30.3	19.1	
White	0.4	2.5		0.0	1.6	
Indian	1.4	2.3		0.5	0.3	

3.9 Frequency of television viewing and problem drinking

As is seen in Table 9, a significant association was found among the males in terms of problem drinking and the frequency of television viewership. Males who problem drink were significantly more likely to watch television at high frequency compared to those males who did not problem drink ($p=0.019$). More than half of the males

(66.4%) who reported problem drinking watched a higher frequency of television compared to their non-drinking counterparts.

This same pattern was found on one of the television channels, namely SABC 1 (p=0.022). The study found no other significant associations among the males and females who reported problem drinking and the frequency of television viewership for SABC2, SABC3 and e.TV.

Table 9: Frequency of television viewing and problem drinking among males and females (16 – 24 years)

FREQUENCY	PROBLEM DRINKING					
	MALE			FEMALE		
	YES (%)	NO (%)	P VALUE	YES (%)	NO (%)	P VALUE
Any TV (N=628/497)			0.019			0.803
No/Low	12.4	15.9		11.7	10.0	
Medium	21.2	28.7		17.0	18.5	
High	66.4	55.4		71.3	71.5	
SABC 1 (n=540/444)			0.022			0.819
No/Low	3.3	5.7		6.0	7.6	
Medium	30.6	39.6		25.3	25.5	
High	66.1	54.7		68.7	66.9	
SABC 2 (n=540/444)			0.510			0.461
No/Low	12.4	14.1		5.4	6.5	
Medium	38.0	41.3		26.5	31.3	
High	49.6	44.6		68.1	62.2	
SABC 3 (n=540/444)			0.110			0.669
No/Low	15.7	21.5		18.7	19.8	
Medium	43.0	44.6		29.5	32.7	
High	41.3	33.9		51.8	47.5	
e-TV (n=540/444)			0.105			0.271
No/Low	5.4	7.1		6.6	7.2	
Medium	30.6	37.9		30.7	23.7	
High	64.0	55.0		62.7	69.1	

3.10. Alcohol advertisements on television

The broadcasting of alcohol advertisements was related to testing the plausibility of youth being exposed to such advertising based on their television viewership during the same period. These data are presented in Figure 1 and Table 10. A grand total of 5942 alcohol advertisements were flighted for the period: 1 February to 31 May 2012. In terms of the proportion of advertisements that were broadcast, e.TV flighted the greatest number of alcohol advertisements (2127, 36.0%), followed by SABC1 (1709, 20.9%), SABC2 (1187, 20.0%) and SABC3 (919, 15.0%). The daily range of alcohol advertisements was quite broad, ranging from none on SABC3 for one day, to 34 alcohol advertisements in one day on e.TV. All four channels had a wide range in the number of alcohol advertisements. The average number of advertisements that were broadcast at all times, per day, ranged from a low of 7.6 for SABC3 to a high of 17.6 for e.TV.

Figure 1: Number of alcohol advertisements by week, on four South African national television channels (SABC1, SABC2, SABC3 and e.TV) between 1 February 2012 and 31 May 2012

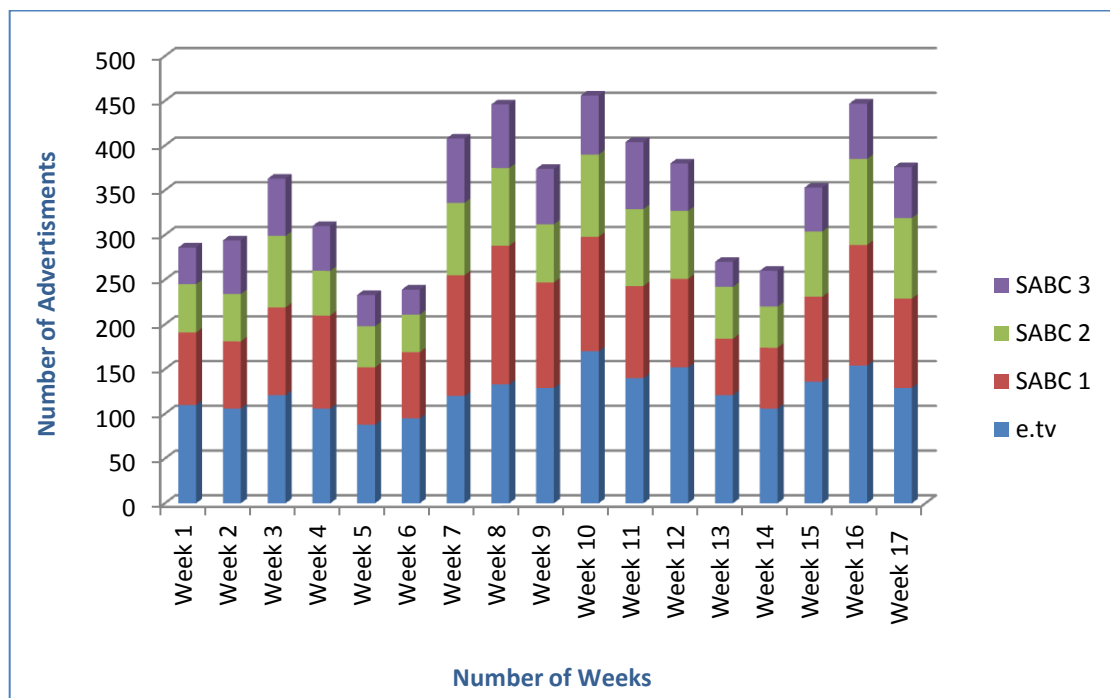


Table 10: Alcohol advertisements per Television Channel

Advertisements	SABC1	SABC2	SABC3	ETV
Total Number of Advertisements per channel	1709	1187	919	2127
Average Number of advertisements per day	14.1	9.8	7.6	17.6
Range of advertisements per day	2 to 29	2 to 22	0 to 23	6 to 34
Proportion of advertisements placed per channel	29%	20%	15%	36%

3.11 Overview of Alcohol advertisements, high frequency viewers and drinking patterns

Table 11 below provides an overview of drinking patterns and the average alcohol advertisements per television station among high frequency youth viewers. Although the NCS data were not intended to explore alcohol advertisement exposure to drinking behaviour, some correlations were found. Specifically, there were correlations with alcohol advertisements on e.TV and youth who had ever drunk; and alcohol advertisements on SABC1 and youth who had ever drunk and those male youth who problem drink. However, these were not consistent nor compelling enough to draw conclusions one way or another.

Table 11: Alcohol advertisements per Television Channel and high frequency viewers and drinking patterns

Average Alcohol Ads / day		e.TV	SABC1	SABC2	SABC3
		17.6/day	14.1/day	9.8/day	7.6/day
High Frequency viewing and Drinking patterns (Yes %)		Yes %	Yes%	Yes %	Yes%
Ever drunk alcohol	Male	59.2	59.7	n/s	n/s
	Female	66.5	67.7	64.8	n/s
Binge Drink	Male	n/s	n/s	n/s	40.8
	Female	n/s	n/s	n/s	n/s
Problem Drink	Male	n/s	66.1	n/s	n/s
	Female	n/s	n/s	n/s	n/s

3.12 Overview of study findings

This present study provides additional data on the television viewership and alcohol advertising on television in South Africa. The present study also builds upon existing studies that show an association between alcohol advertising and alcohol use among youth. The prevalence for binge and problem drinking among those who had ever drunk was higher for males compared to females and a number of socio – demographic characteristics, beyond sex were associated with drinking patterns like age, education and employment, with more unemployed youth having ever drunk and had been binge drinking. A higher proportion of those who reported ever having drunk lived in urban areas and race was associated with youth who had ever drunk and problem drinking, particularly amongst the Coloured youth. The majority of the youth watched television during the period in which the NCS was undertaken and the frequency of television viewership was associated with all three drinking patterns of the youth.

Chapter 4: Discussion

The implications of the findings presented in Chapter 3 are discussed according to the study aim and objectives in light of the broader literature on youth drinking patterns, television viewership patterns and alcohol advertising.

4.1 Prevalence of drinking patterns

The table below provides an overview of the alcohol use trends found in the present study in comparison to national studies undertaken amongst youth in South Africa, namely the Youth Risk Behaviour Surveys (YRBS) although there may be slight differences in the age categories and assessment measures.

Table 12: Alcohol use trends

Alcohol use	Overall Prevalence %			
	Present Study	YRBS 2002	YRBS 2008	YRBS 2011
Ever Drunk	34.9	49.1	49.6	49.2
Binge Drinking	20.7	23.0	28.5	25.1
Problem Drinking	14.0	-	-	-

4.1.1 Ever drunk

The overall prevalence of having ever drunk in the present study (34.9%) was lower than the national findings of the last South African National Youth Risk Behaviour Surveys (YRBS) that was undertaken in 2011. The YRBS reported that 49.2% of learners (aged 13 – 19 years in Grades 8 – 11) had drunk at least one or more drinks of alcohol in their lifetime (Omardien et al., 2013). These findings for reported alcohol use show no substantial difference for the past ten years when compared to the previous YRBS that were done in 2002 and 2008 (Omardien et al., 2013). Other more localised studies, like the study among students in 16 high schools in the Cape Peninsula of South Africa, found that 53.2% of the sample reported ever using alcohol (Flisher et al., 1993). Another study on lifetime alcohol use among youth in Soweto, South Africa, showed an increase from 22% at early adolescence (13 years) to 66% at late adolescence (18 year olds) (Ramsoomar et al., 2013). However, the overall prevalence for having ever drunk in the present study is closer in alignment

to the findings of the last YRBS. The lower prevalence in this study could be related to sampling differences - a higher proportion of urban youth who tend to have higher rates were sampled in the YRBS (2011) (Ouardien et al., 2013).

4.1.2 Binge drinking

The overall prevalence of binge drinking among youth in the total sample was 20.7% (slightly lower than the national prevalence reported in the YRBS 2011); and the prevalence for binge drinking, among those who ever drank was 60.5%. The YRBS (2011) reported a national prevalence of 25.1% for youth aged 13 – 19 years (Ouardien et al., 2013). A review conducted in South Africa on alcohol use trends by Ramsoomar and Morojele (2012) found that the national prevalence for binge drinking, according to the YRBS 2002 and 2008, among youth aged 13 – 19 years increased from 23.0% to 28.5 % and more noticeably, females showed the greatest increase in binge drinking from 18.0% to 23.7% (Ramsoomar and Morojele, 2012). The findings from the present study are slightly lower than the prevalence reported in the three YRBS studies (2002, 2008 and 2011) as well as the systematic review of national and local surveys by Peltzer and Ramlagan (2009). This review found that measures for assessing binge drinking differed in samples and reported a slightly higher prevalence for binge drinking than the YRBS (Peltzer and Ramlagan, 2009). The prevalence for binge drinking among current drinkers (aged 15-24 years) increased from 29.0% in 1998 (DHS) to 31.0% in 2005 (SABSSM II), however, this percentage was much higher (up to 43%) when the analysis was restricted to local studies amongst university students who were current drinkers (Peltzer and Ramlagan, 2009). The findings among university students from the Peltzer and Ramlagan (2009) study are similar to another local study that estimated that binge drinking among high school students ranges from 14% to 40% (Onya et al., 2012).

4.1.3 Problem drinking

In the present study, the overall prevalence for problem drinking among youth in the sample was 14.0%, using the CAGE assessment measure. Similarly, the review by Peltzer and Ramlagan (2009) found among youth (15-24 years), 17.0% of males and 6.0% of females in 1998 (DHS) had problem drinking. The findings from the review

were based on the CAGE assessment measure. For the present study, among youth who had ever drunk, the prevalence for those who reported problem drinking was 41.2%. This is similar to the Peltzer and Ramlagan (2009) review of studies of South African university students who were current drinkers from 1999 to 2006, which showed a problem drinking prevalence of 17.1% to 58.0%. However, it should be noted that these studies used the AUDIT (Alcohol Use Disorder Identification Test) assessment measure and not CAGE (Peltzer and Ramlagan, 2009). The findings of the Peltzer and Ramlagan (2009) study are similar to the findings of the present study for problem drinking among those who had ever drunk, although that review reported on university students only, whereas the present study included a national sample of youth.

The pattern of drinking among youth in this study is consistent with other South African studies that have highlighted the unacceptably high engagement in harmful alcohol use among youth. A study of youth in rural high schools in Limpopo province in South Africa examined the psycho-social correlates of lifetime alcohol use among the students and reported that personal attributes (age, gender), psychological behaviour (delinquent behaviour) and environmental factors (availability of alcohol and social norms) are associated with the students alcohol use (Onya et al., 2012). Some possible explanations for harmful alcohol that are reinforced by the findings of the study by Onya et al., (2012) include issues on alcohol accessibility (density of formal and informal alcohol outlets in urban and rural areas), aggressive alcohol advertising, affordability, and psycho-social problems due to unemployment, boredom and peer pressure, which were not addressed directly in the present study.

4.2 Male gender and alcohol use

The present study found that more males reported ever having drunk than females. This is consistent with global and national trends that showed that males outnumber females with regard to frequency of alcohol use, binge drinking, and alcohol use disorders (World Health Organization, 2011, Ramsoomar and Morojele, 2012). Other studies that were undertaken in South Africa have shown that more male youth had ever drunk and engaged in binge drinking (Flisher et al., 1993, Van Heerden et al., 2009, Onya et al., 2012, Reddy et al., 2010, Omardien et al., 2013). This pattern is not

unique to South Africa, with similar findings in other middle-income countries, such as Brazil (Castroanda et al., 2012).

4.3 Age and Alcohol Use

The present study found that more youth in the older age category of 20 – 24 years reported having ever drunk and had engaged in binge drinking. Although there was no significant statistical association with the males and females who problem drink and those who did not problem drink with respect to age, more males and females in the older age category reported problem drinking. These findings are similar to the findings of Peltzer (2011) who cited that the most prevalent age for binge drinking is between 18 – 35 years (Peltzer et al., 2011). Similar consistencies were found in the review of students in South African universities (Peltzer and Ramlagan, 2009). It can be assumed that most students at university fell within the age category of 20 – 24 years and may have already been initiated into alcohol use at a younger age.

4.4 Education and Alcohol use

The present study found that youth who had ever drunk and those who had engaged in binge drinking were more likely to have had matric to tertiary level education, but those who had problem drinking (female only) were more likely to have post primary to grade 11 level of education. These findings are contrary to the Peltzer and Ramlagan (2009) review, who found that in both the DHS (1998) and the SABSSM (2005), lower levels of education were associated with higher levels of binge drinking among current drinkers. However, the same review found that university students who were current alcohol users, engaged in binge and risky drinking. These findings are reinforced by another study by Young and De Klerk (2008) of students at one South African university which found harmful drinking patterns among students (using the AUDIT measure). This study suggested that excessive alcohol use amongst students is public health concern and likely to result in serious medical and social consequences (Young and De Klerk, 2008). A study of women in Botswana found that higher education amongst women was associated with heavy alcohol use (Weiser et al., 2006). These studies are in accord with the findings of the present study. Some possible reasons for alcohol use amongst university students may be due to easier

access to alcohol, greater freedom from direct parental control and peer pressure, which is part of the modern university culture.

4.5 Employment and Alcohol use

The present study found that the employment status of youth was associated with alcohol use. More unemployed youth reported ever having drunk and having engaged in binge drinking. The Report by the Department of Statistics South Africa (2014) on the national and provincial youth labour market show unemployment rates of 32.7% (2008) and 36.1% (2014) for youth aged 15–24 years (Statistics South Africa, 2014). This is consistent with a review on alcohol abuse and the social and economic causes and consequences of harmful alcohol use in South Africa (Setlalentoa et al., 2010). This review cites an association between harmful alcohol use and unemployment, although the review did not specify gender. The directionality of the association is unclear. That harmful alcohol use may result in unemployment or that unemployment may lead to increased alcohol use are both plausible explanations and they are not mutually exclusive.

4.6 Residence and alcohol use

The present study found that residential setting and alcohol use was associated only among those who had ever drunk, with more youth who reported ever having drunk living in urban areas. Peltzer and Ramlagan (2009) reported similar findings for binge and problem drinking, which was not replicated in the present study. The present study is more consistent with the findings of Peer and colleagues (2013), who found that there was no overall significant difference between urban and rural locality for problem drinking (using the CAGE assessment measure). However, the study by Peer and colleagues found that among females the odds of problem drinking were higher in urban compared to rural females and the prevalence of problem drinking was higher for rural and urban males (Peer et al., 2013).

4.7 Socioeconomic status and alcohol use

In the present study the SES of youth was associated with ever having drunk and with problem drinking. More females who ever drunk and those (males and female)

who had problem drinking had medium SES. The findings from the present study are consistent with the findings of Castroanda et al (2012), who found that among Brazilian men (aged 18 – 24), those with higher income were likely to engage in binge drinking (Castroanda et al., 2012). However, the findings of the present study are contrary to the findings of a South African study by Peltzer et al., (2011) which found that women with high income were protected from hazardous or harmful drinking. Peltzer and colleagues also found that those with lower SES were more likely to abstain from alcohol or were non-current drinkers, which is consistent with the findings of the present study. Another proxy for extremely low income was food insecurity, which had an association with problem drinking, but among the females only.

4.8 Race and alcohol use

Race was associated with youth who had ever drunk and with those who problem drink. In the present study, Coloured youth were more likely to report ever having drunk and Coloured females were at greater risk of reporting problem drinking. This is consistent with the findings from several studies. A study by Van Heerden et al., (2009) found that the Coloured population in South Africa were more likely than other population groups to have used alcohol. Similar findings were shown in a review of national and local surveys on alcohol use in South Africa by Peltzer and Ramlagan (2009) that found that alcohol use in pregnant women was particularly high among the Coloured population. Another study which formed part of the SABSSM 2008 survey in South Africa found that harmful alcohol use among men was associated with the Coloured population group (Peltzer et al., 2011). A further study on ethnic differences in alcohol and drug use found that heavy episodic drinking was most prevalent among Coloured women aged 18 – 33 years, in Cape Town, South Africa (Myers et al., 2013).

In light of the above findings about drinking and the Coloured population in South Africa, Mager (2004) reported that during the colonial period, the non – white population groups were more vulnerable to alcoholism than the white population. This study reported that the incidence of alcoholism among the Coloured population was the highest and that the vulnerability of the Coloured population may be

attributed to the historic (“tot” system) in which Coloured farm workers were partly paid in cheap wine which exacerbated health problems and encouraged addiction (Mager A, 2004). This study findings are in accordance with the findings of the present study.

4.9 Alcohol Advertising on television

The present study found that given the high proportion of alcohol advertisements broadcasted during the period of the NCS and the high levels of TV viewership, youth were very likely to have had exposure to these advertisements when watching television. These findings are in accordance with the findings of other studies (Chung et al., 2010, De Bruijn, 2011). The MAMPA study in four Sub-Saharan African countries by De Bruijn (2011) reported on the large volumes of alcohol marketing in multiple media channels within three of the four countries. This study found that except for Gambia, the alcohol industry had great freedom in alcohol marketing activities due to a limited or absent alcohol marketing policy and regulations (De Bruijn, 2011).

The trend and comparative analysis study by Van Walbeek and Daly (2014) on alcohol advertisement in South Africa found that in 2012, the alcohol industry identified the television as the most important advertising medium and spent 74.0 % of the total alcohol advertising expenditure for television advertising. This analysis also shows that the national South African Broadcasting Channel (SABC) received 43% and e.TV received 19% of the television-based alcohol advertising revenue. The trend analysis by Van Walbeek and Daly (2014) confirm that alcohol advertising on television is widespread, with millions of youth reached on a daily basis, regardless of the channel that is viewed.

4.10 Alcohol advertisements on television and drinking patterns of youth

The present study found that drinking patterns of youth were associated with television viewership and the frequency of viewership, although the viewership varied in frequency per television channels viewed, for both males and female. These findings are consistent with numerous bodies of evidence that report an association between alcohol advertisements and marketing and youth drinking patterns and

behavior (Smith and Foxcroft, 2009, Mngadi and Senkubuge, 2014). The review by Mngadi and Senkubuge (2014) to assess effects of alcohol advertising on adolescent alcohol use analysed eight global studies (from United States of America, United Kingdom, Australia, Germany and Brazil) which included the cumulative/longitudinal impact of exposure to alcohol adverts, the frequency of exposure and variables/confounders which included gender, age, alcohol drinking behaviours, TV time/movies, perceptions about alcohol adverts, and personal characteristics. The review found an association between youth exposure to various forms of alcohol advertising and their initiation of alcohol use with possible progression to binge drinking (Mngadi and Senkubuge, 2014). Another systematic review of seven cohort studies (five in the USA, one in Belgium and one in New Zealand) of youth aged 10 – 26 year olds by Smith and Foxcroft (2009) evaluated a range of different alcohol advertisement and marketing exposures including print and broadcast media. This review included an analysis of the hours of TV and music video viewing and drinking behaviour and controlled for age and gender. Like Mngadi and Senkubuge’s review, they found an association between prior exposure to alcohol advertising and subsequent alcohol use in youth. The study by Winter et al., (2008) reported on the extent to which children (0-12 years) teenagers aged (13-17 years) and young adults (18 - 24 years) in Australia, were exposed to alcohol advertising on television. This study found that the level of exposure of alcohol advertising to underage teenagers was almost the same for young adults (Winter et al., 2008). Both underage teenagers and young adults were exposed to unacceptably high levels of alcohol advertising on free-to-air television and the study suggested that alcohol marketers may be deliberately targeting these specific ages (Winter et al., 2008). A study conducted by Anyange (2014) in one county in Kenya investigated the influence of television advertisements on alcohol consumption among the youth, aged 14 – 19 years. The study found that despite student knowledge about alcohol drinking and the side effects of alcohol, but still drank alcohol and highlighted peer pressure and alcohol advertisements as the key cause of youth drinking (Anyange, 2014). The results from the above reviews and studies are in accordance with the present study findings. Whilst the MAMPA study by De Bruijn (2011) reported on alcohol marketing strategies in four Sub-Saharan African countries (Gambia, Ghana, Nigeria and

Uganda), the present study is the first study that has explored the association between TV advertisements and youth drinking in South Africa, to the knowledge of the researcher.

Some studies suggest that alcohol advertising increases consumption and the advertising and marketing of alcohol be restricted and that limited bans are likely to result in substitution for other available media (Parry, 2005b, Hollingworth et al., 2006, Saffer and Dave, 2006, Anderson et al., 2009b, Smith and Foxcroft, 2009, Mngadi and Senkubuge, 2014). The study by Saffer and Dave (2006) suggest that a complete ban on all alcohol advertising, with advertising policies could reduce adolescent alcohol consumption, based on the results of the National Longitudinal Survey of Youth (NLSY97) that was conducted in the United States. A separate review by Anderson and colleagues (2009b) found that policies that regulate the environment in which alcohol is marketed (commercial communications) are effective in reducing alcohol related harm. They recommended a ban on direct and indirect alcohol advertising as one of six key policy approaches for countries in which alcohol is normally available. Closer to home, the review by Parry (2005b) of alcohol intervention strategies likely to be effective in South Africa, include increasing restrictions on alcohol marketing on television where the substantial proportion of the viewing audience are underage and increasing alcohol counter-advertising (beyond warning labels).

It is worth noting that some studies show that advertising bans do not decrease alcohol consumption or harmful alcohol. A study on bans on broadcast advertising in 17 Organisation for Economic Co-operation and Development (OECD) countries from 1977-95 found that advertising bans did not decrease alcohol consumption or harmful alcohol use (Nelson and Young, 2001). This finding was supported by a later study in OECD countries for the period 1975-2000 that also found that bans on advertising in the broadcast media does not decrease alcohol consumption (Nelson, 2010). This study also cited that other social and economic factors influence alcohol use, since countries with bans also adopt other unmeasured policies that reduce alcohol demand.

4.11 Limitations

Some of the following limitations need to be considered in view of the findings of the present study.

Although the age of initiation of alcohol use begins much earlier than 16 years of age, the age was restricted to 16 – 24 years in this study, since this was a secondary analysis with the youngest age in the NCS being 16 years.

The NCS was a cross sectional study and, as such, temporality cannot be established with regard to exposure to alcohol advertisements on television and alcohol use among youth. Hence, cause and effect could not be inferred. A firm conclusion about television alcohol advertising exposure resulting in harmful alcohol use among youth cannot be fully established. Furthermore, as this was secondary analysis, there may be other factors that may have influenced alcohol use among youth that were not explored in the present study due to the variables available.

Addressing potential confounding factors was beyond the analytic scope of the MPH research report. Although the findings of the present study suggested an association between alcohol use and exposure to television advertisements, further multivariate analysis is required to address this issue. Within the scope of the MPH research report, this study's findings are consistent with findings of other studies that were outlined under the discussion.

Another limitation is that it is not possible to confirm from the NCS data the times in which youth watched television. The data collected by the primary study only provided information on the number of days television was viewed and not on the time and number of hours per day that the television was viewed, whereas the data from Nielsen South Africa provides the exact times of TV advert flighting for example, 09:00 to midnight, in which the alcohol advertisements were broadcast. To get a much more accurate analysis, the NCS data on viewership would need to be more detailed i.e. when they watched TV so that this could be linked with the alcohol advertisement exposure. Hence, the exact correlation between television viewership and the broadcast of the alcohol advertisements could not be clearly drawn. Like the data in the NCS, the quality of the data from Nielsen South Africa is

also dependent on the data collecting process and therefore cannot be readily or retrospectively verified. We can only rely on the credibility and reputation of this organisation in their collection and management of this information.

As is true in any survey method, recall bias or social desirability factors on the part of the respondents may have influenced the data collection in the NCS, resulting in alcohol use possibly being under or over reported by respondents who either wanted to be socially accepted by appearing to be moderate alcohol users or by appearing to binge or use alcohol excessively due to wanting to “fit in” due to peer pressure. By comparing NCS results with other national data, the plausibility of the results seems to be supported.

Chapter 5: Recommendations and Conclusion

The present study found that the prevalence for all three alcohol drinking patterns (ever having drunk, binge drinking and problem drinking) among youth in the total sample were of concern. This reinforces the importance of designing interventions to prevent or reduce alcohol-related harm among South Africa youth. Furthermore, there were associations between these patterns and television exposure, which suggests the need for specific actions to address alcohol advertising on television. Beyond advertising restrictions, the findings also suggest the need for a broad range of social and behavioural change communication (SBCC) interventions among youth in South Africa.

5.1 Youth most affected by alcohol use

The findings from the present study show that the main socio-demographic factors associated with alcohol use among youth, profile youth as 20 – 24 years old, with matric to tertiary level education; unemployed; living in urban settings and being Coloured. The alcohol industry utilises marketing strategies to differentiate populations into subgroups or segments according to specific needs, lifestyles, and behaviour and norms and especially targets youth. These factors are carefully considered by the alcohol industry when the target audiences are analysed for marketing purposes. A study by Jackson et al., (2000) on marketing of alcohol to youth in the United Kingdom, found that alcohol companies allocated significant resources to research consumer preferences and develop and promote new products on an international level. This study found that youth attach great value to alcohol brand labels and symbols and the alcohol industry has responded to these trends by designing alcoholic beverages that appeal to young people, using well-informed and precisely targeted marketing strategies (Jackson et al., 2000). This study further cites that this has led to growing concerns about the implications for public health and a demand for tighter controls to regulate alcohol marketing practices. An example of how the alcohol industry designs its content for alcohol advertisements is shown in a study by Chen et al. (2005). This study of youth in the

USA showed that the perceived likeability of beer advertisements was evoked by the specific elements featured in the advertisements. The study found that the perceived attractiveness of alcohol advertisements was closely related to appreciation of the elements of humour and story than to appreciation of music, animal characters, and people characters and the three most favourable advertisements used animal characters as the leading actors (Chen et al., 2005). Instead of generalised approaches, to counteract alcohol industry marketing, public health planners must be guided by planning frameworks and social marketing strategies which segment youth according to the specific findings of the present study, including considerations such as sex, age, race and employment status. More specifically, Social and Behavioural Change Communication (SBCC) interventions directed at youth need to be designed according to the profile and needs of vulnerable subgroups, e.g. 20 – 24 years, matric to tertiary education, unemployed, urban living and Coloured.

Beyond segmentation, if youth in South Africa are engaging in harmful alcohol use, it stands to reason that public health programme planning and implementation for SBCC interventions need to look beyond individual youth. The Ottawa Charter on Health Promotion (World Health Organization, 1986) and the Socio Ecological approach (Stokols, 1992) to health should be used to guide the development and implementation of the SBCC interventions. The use of this framework and approach would ensure that harmful alcohol use is addressed at individual, inter- personal, community and societal levels, inclusive of addressing the social determinants of health. These SBCC interventions should be guided by evidence, taking into consideration the key action areas of the Ottawa Charter on Health Promotion, namely, building healthy public policy; creating supportive environments; strengthening community action; developing personal skills; and reorienting health (World Health Organization, 1986). Based on the study findings, and in accordance with the Ottawa Charter, a national policy intervention should include restriction of television alcohol advertising. Also, based on the scope and distribution of youth drinking patterns documented in this study, there is evidence to support developing

more conducive environments to address youth unemployment and community action to advocate and place the issue of harmful alcohol use onto political agendas.

5.2 Alcohol advertising and youth drinking patterns

The majority of youth watched television during the period in which the NCS was undertaken and all three alcohol drinking patterns were associated with television viewership. Since the NCS data did not specify viewership times, specific explanations for these patterns remain unclear. However, there is a strong likelihood that the youth respondents would have been exposed to alcohol advertising, since a large proportion of advertisements were broadcast on all of the four national television channels during the study period.

5.3 Recommendations

In light of the study findings, the central need is for government policy change with regulatory enforcement to restrict alcohol marketing and advertising, in order to reduce alcohol consumption and alcohol related harm, especially among youth. However, as highlighted by Parry's (2005a) review of policy-relevant strategies and interventions to address the burden of alcohol on individuals and society in South Africa, there is no single strategy or "magic bullet". Study findings that show different distributions of risk among youth as well as high overall prevalence of drinking require multi-level as well as multi-sectoral approaches. A few suggestions are included in these recommendations, in line with the study findings and what has worked in other contexts.

5.3.1 Alcohol Advertising Restrictions

The amendments to the national liquor policy that was gazetted by the Department of Trade and Industry for public comment in May 2015, intends to amend the Liquor Act, 59 of 2003 to include restrictions on alcohol advertising (Ministry of Trade and Industry, 2015). This proposed amendment empowers the Minister of Trade and Industry to restrict and set parameters for advertising and marketing of liquor products, which is aligned to the Control of Marketing of Alcoholic Beverages Bill that also calls for the restriction of advertisement of the alcoholic beverages and

promotion associated with alcoholic beverages. Alcohol advertising, especially on television is shown to be associated with the harmful use of alcohol and the call for government to restrict direct and indirect alcohol advertising is supported by various studies (Parry, 2005b, Hollingworth et al., 2006, Saffer and Dave, 2006, Anderson et al., 2009b, Smith and Foxcroft, 2009, Mngadi and Senkubuge, 2014). This study joins the chorus. The proposed restriction on alcohol advertising in South Africa is welcomed as a measure to reduce alcohol exposure, especially to youth.

In the absence of a complete ban on television alcohol advertising and until this is achieved, counter- advertising measures are recommended for the use in the mass media, like health warnings and alcohol labeling to promote the harmful effects of alcohol. The proposed amendments to the national policy that empower the Minister to ensure strict labelling of liquor products and intensify consumer awareness is supported. Parry (2005b) suggests the inclusion of rotating labels with easy to read messages including pictures to cater for people with poor literacy levels to be placed on container labels. Although counter advertising measures are recommended to provide an opportunity for awareness and education on the harmful use of alcohol, Anderson, et al (2009b) found the effectiveness of this measure to be inconclusive. Anderson and his colleagues recommend the need to establish a social understanding that alcohol is a hazardous commodity and for media advocacy to be used to heighten attention to alcohol by placing alcohol on public and political agendas. They suggest that these actions be tailor made for specific target audiences and piloted to assess efficacy for use within the South African context (Anderson et al., 2009b). In light of the above evidence, South Africa clearly needs regulatory measures to restrict alcohol advertising and marketing to youth and targeted social and behavioural change communication (SBCC) interventions, which includes counter advertising measures to address the harmful use of alcohol.

5.3.2 A multi-level response and social determinants of health

Whilst the main recommendation is to restrict alcohol advertising in South Africa, a multi-level response is needed to effectively implement this proposed legislation and to ensure compliance by the alcohol industry. The review by Parry (2005b) showed that alcohol intervention strategies in South Africa were fragmented across different government departments and across different levels of government and that a national strategy was required for a coordinated response that included civil society. This recommendation by Parry (2005b) is fully supported, since there is a need for the key government departments like Social Development, Trade and Industry and Health to work collaboratively with a “Health in All Policies” (HiAP) approach to ensure the finalisation and implementation of the amended national alcohol policy with a special focus on reducing youth exposure and influence of alcohol advertising in South Africa (Leppo et al., 2013). However, there is also a need for a multi-sectoral response from Non-Governmental agencies and Community Based Organisations to support the government initiative to restrict alcohol advertising and to act as watch dogs in assisting government to monitor alcohol industry compliance with the proposed legislation on alcohol advertising and marketing.

The findings from the present study identify the need to go beyond legislation and to address some of the social determinants of health, like unemployment amongst the youth. Unemployed youth were more likely to have ever drunk and to have engaged in binge drinking, were Coloured, and lived mostly in urban settings. This multi sectoral approach between the public, private sector and civil society is needed to address some of these social determinants, with interventions designed and implemented collaboratively, in accordance with the action areas of the Ottawa Charter on Health Promotion (World Health Organization, 1986). This is particularly important in addressing the social determinants of health and particularly the high rate of unemployment experienced especially amongst youth in South Africa (Statistics South Africa, 2014).

5.4 Further Research

Although females who reported ever having drunk were also unemployed, the findings for females in the present study were more complex and nuanced than for males and require further study. For a start, this could include regression analysis of existing cross-sectional data to examine possible relationships between and among variables like socio economic factors and alcohol drinking patterns and the association with alcohol related harm. Further longitudinal studies are also needed to determine relationships and the possible causal effects between and among various variables like drinking patterns and Coloured youth and alcohol related harm in the South African context.

Youth are the target for the alcohol industry, as reported in various studies on alcohol. An article on the overview of the global alcohol industry found that the alcohol industry is highly concentrated and innovative and there is relatively little public health research evaluating the impact of its many marketing activities (Jernigan, 2009). While the present study found correlations between the intensity of alcohol advertisements on television and youth drinking patterns, the evidence was not consistent or compelling. It is therefore recommended that further studies should be undertaken to directly track alcohol advertising exposure to behaviours, ideally longitudinal studies.

We also need to undertake further studies on alcohol marketing activities to provide insight into the marketing strategies and how they influence harmful alcohol use among youth in South Africa. Appropriate tools to monitor these activities based on the study findings, will thereafter also need to be developed. In addition, costing studies need to be done to show alcohol harm versus revenue that is generated from alcohol advertising.

5.5 Conclusion

Notwithstanding the limitations, the findings of the present study contribute to the evidence base that suggests that alcohol advertisements on television is associated with alcohol use among youth in South Africa. The MAMPA study by De Bruijn (2011)

cites that the effect on youth is larger when exposed to larger volumes of alcohol marketing and when the content is appealing to youth. That study strongly recommends that effective legislation is necessary to strictly regulate alcohol marketing activities (De Bruijn, 2011), as has already been proposed by the South African government. What is now required is the translation of a growing body of evidence into a decisive public health response, to mitigate against the strong influence of alcohol advertising and marketing in South Africa.

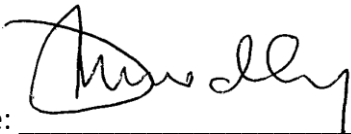
Appendix A



I **Ms Dhamaravelli Moodley** (Student number: **679261**) am a student registered for the degree of Masters in Public Health in the academic year 2012.

I hereby declare the following:

- ❖ I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- ❖ I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- ❖ I have followed the required conventions in referencing the thoughts and ideas of others.
- ❖ I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature:  Date: 25 Feb 2016

A3. If the participant agreed to participate, did he/she sign the consent form?	1=Yes 2=No	
A4. If the participant is 16 or 17 years old, did his/her guardian sign the parental consent/assent form?	1=Yes 2=No	
A5. Has the participant retained a copy of the information sheet?	1=Yes 2=No	

SECTION 1: DEMOGRAPHICS

1.1	Sex of the respondent [DO NOT READ OUT LOUD]	1= Male 2= Female	
1.2	Race of the respondent [DO NOT READ OUT LOUD]	1= Black 2= Coloured 3= White 4= Indian 55= Other (specify)	
1.3	PRESENT age of the respondent today		Years: _____
1.13	What is your marital status? (Marital status referring to legal, traditional or common-law) [DO NOT READ OUT LOUD] [ONE RESPONSE ONLY]	1 = Single 2 = Not married or living together but in a steady sexual relationship lasting more than 3 months 3 = Not married, but living with sexual partner/boyfriend/girlfriend 4 = Married, living with husband/wife 5 = Married, NOT living with husband/wife 6 = Divorced/Widowed 55= Other (specify)	
1.14	What is your present employment status? [DO NOT READ OUT LOUD] [ONE RESPONSE ONLY]	1 = Unemployed, not looking for work 2 = Unemployed, looking for work 3 = Informal work (such as making things for sale, selling things or providing a service) 4 = Employed full-time [40 or more hours a week] 5 = Employed part-time [less than 40 hours a week] 6 = Full-time student / pupil / learner at SCHOOL 7 = Full-time student at COLLEGE / TECHNIKON / UNIVERSITY 8 = Pensioner 9 = Living on disability or other grant 55= Other (specify)	

<p>1.15</p>	<p>What is the HIGHEST grade of education you have completed?</p> <p>[DO NOT READ OUT LOUD]</p> <p>[ONE RESPONSE ONLY]</p>	<p>18 = No schooling 1 = grade 1 2 = grade 2 3 = grade 3 4 = grade 4 5 = grade 5 6 = grade 6 7 = grade 7 (Standard 5) 8 = grade 8 9 = grade 9 10 = grade 10 11 = grade 11 (Standard 9) 12 = grade 12 (Standard 10 / Matric) 13 =Diploma, certificate after Matric) 14 = one to three years of university 15 = Bachelor's degree from a University 16 = Post graduate degree (eg. Honours, Masters) 17 =Doctoral degree (PhD) 55= Other (specify)</p>	
-------------	---	---	--

1.16	In the PAST 12 MONTHS, how often have you gone without the following: [READ OUT LOUD]		
1.16.1	In the PAST 12 MONTHS, how often have you gone without <u>enough fuel (including electricity) to heat your home or cook food?</u>	1=Often 2=Sometimes 3=Rarely 4=Never	
1.16.2	In the PAST 12 MONTHS, how often have you gone without <u>enough clean water to drink?</u>	1=Often 2=Sometimes 3=Rarely 4=Never	
1.16.3	In the PAST 12 MONTHS, how often have you gone without <u>medicines or medical treatment that you needed?</u>	1=Often 2=Sometimes 3=Rarely 4=Never	
1.16.4	In the PAST 12 MONTHS, how often have you gone without <u>enough food to eat?</u>	1=Often 2=Sometimes 3=Rarely 4=Never	

1.17	Please tell me which of the following are presently in your household <u>that are in working order</u> [THIS HOUSEHOLD HERE] [READ OUT LOUD]		
1.17.1	Microwave oven	1=Yes 2=No	
1.17.2	Flush toilet in house or on plot	1=Yes 2=No	
1.17.3	Washing machine – automatic/ semi-automatic/ twin tub	1=Yes 2=No	
1.17.4	Built-in kitchen sink	1=Yes 2=No	
1.17.5	Water in home or on stand	1=Yes 2=No	
1.17.6	Electricity in the household	1=Yes 2=No	
1.17.7	One or more motor vehicles in household	1=Yes 2=No	

SECTION 9: ALCOHOL USE

Interviewer read out loud: I would now like to ask you some questions about alcohol use		
9.1 ☞	Have you ever had an alcoholic drink?	1= Yes 2= No → SKIP TO Q9.2 98 = Refused to answer → SKIP TO Q9.2
9.1.1	During the PAST MONTH, how many times did you have an alcoholic drink? [READ OUT]	1= Never 2= Almost every day 3= Several times per week 4= At least once a week 5= At least once a month 98 = Refused to answer
9.1.2a	How often do you have (<i>for men</i>) <u>five</u> or more and (<i>for women</i>) <u>four</u> or more drinks on one occasion? [READ OUT]	1 = Never 2 = Hardly ever 3 = Less than once a month 4 = A few times a month 5 = Almost every week 6 = Almost every day 98 = Refused to answer
9.1.2b	During the past month, how many times have you been drunk? [READ OUT]	1= Never 2= Almost every day 3= Several times per week 4= At least once a week 5= At least once a month 98 = Refused to answer
9.1.3	In the PAST MONTH did you have sex with anyone after having too much to drink?	1= Yes 2= No 3= Not had sexual intercourse 96= Don't know 96= Not applicable 98 = Refused to answer
9.1.4	Have you ever felt you should cut down on your drinking ?	1= Yes 2= No 98 = Refused to answer
9.1.5	Do you intend to cut down on your drinking in the coming month? [READ OUT]	1 = Definitely will cut down 2 = Probably will cut down 3 = Probably will not cut down 4 = Definitely will not cut down
9.1.6	Have people <i>annoyed</i> you by criticizing your drinking	1= Yes 2= No 98 = Refused to answer
9.1.7	Have you ever felt bad or <i>guilty</i> about your drinking?	1= Yes 2= No 98 = Refused to answer
9.1.8	Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (<i>eye-opener</i>)	1= Yes 2= No 98 = Refused to answer

SECTION 10: PROGRAMME EXPOSURE

Interviewer Read out Loud: How many days a week do you usually do the following? READ OUT ALL			
10.1	Watch television	5 = Never → SKIP TO Q10.1.9 1= Less than once a week 2 = 1 to 3 days a week 3 = 4 to 6 days a week 4 = Every day of the week	
10.1.3	Watch SABC-1TV	5 = Never 1= Less than once a week 2 = 1 to 3 days a week 3 = 4 to 6 days a week 4 = Every day of the week	
10.1.4	Watch SABC-2TV	5 = Never 1= Less than once a week 2 = 1 to 3 days a week 3 = 4 to 6 days a week 4 = Every day of the week	
10.1.5	Watch SABC-3TV	5 = Never 1= Less than once a week 2 = 1 to 3 days a week 3 = 4 to 6 days a week 4 = Every day of the week	
10.1.6	Watch e-TV	5 = Never 1= Less than once a week 2 = 1 to 3 days a week 3 = 4 to 6 days a week 4 = Every day of the week	

Appendix C: Human Research Ethics Committee Approval: National Communication Survey (NCS)



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON MEDICAL)

R14/49 Johnson

CLEARANCE CERTIFICATE

PROTOCOL NUMBER H110701

PROJECT TITLE

The 3rd HIV National Communication Survey

INVESTIGATOR(S)

Dr S Johnson

SCHOOL/DEPARTMENT

Health and Development Africa

DATE CONSIDERED

15 July 2011

DECISION OF THE COMMITTEE

Approved Unconditionally

EXPIRY DATE

31 July 2013

DATE

12 October 2011

CHAIRPERSON


(Professor R Thornton)

cc; N/A

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**


Signature

27, 10, 2011
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix D: Human Research Ethics Committee Approval: Present Study

M140471



HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL) CLEARANCE CERTIFICATE NO. M140471

NAME: Ms Dhamaravelli Moodley
(Principal Investigator)

DEPARTMENT: School of Public Health
National Department of Health

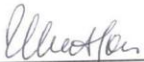
PROJECT TITLE: Exploring Exposure to Television Alcohol Advertising and
Harmful Alcohol Use among South African Youth

DATE CONSIDERED: 25/04/2014

DECISION: Approved unconditionally

CONDITIONS:

SUPERVISOR: Mrs Sara Nieuwoudt and Dr R Weiner

APPROVED BY: 

Professor PE Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 04/06/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.**

Principal Investigator Signature

M140471Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

References

- ANDERSON, P., BRUIJN, A. D., KATHRYN, A., GORDON, R. & HASTING, G. 2009a. Impact of Alcohol Advertising and Media Exposure on Adolescent Alcohol Use: A Systematic Review of Longitudinal Studies. *Alcohol & Alcoholism* Vol. 44, pp. 229–243.
- ANDERSON, P., CHISHOLM, D. & FUHR, D. C. 2009b. Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *Lancet*, 373, 2234-46.
- ANYANGE, D. O. 2014. The influence of television advertisements on alcohol consumption among youth in secondary schools in Kwale county: a case of Kasemeni Location. Nairobi: University of Nairobi.
- BUSINESS DAY, L., L. 2013. *Throw off our nappies and rein in all those nannies*. [Online]. Business Day Newspaper. Available: www.bdlive.co.za.
- CASTROANDA, D. S., SANCHEZB, Z. M., ZALESKIA, M., ALVESA, H. N. P., PINSKYA, I., CAETANOC, R. & LARANJEIRAA, R. R. 2012. Sociodemographic characteristics associated with binge drinking among Brazilians. *Drug Alcohol Depend.*
- CENTRES FOR DISEASE CONTROL AND PREVENTION. 2012. *Fact Sheets- Binge Drinking* [Online]. Atlanta, USA. Available: <http://www.cdc.gov>.
- CHEN, M.-J., GRUBE, J. W., BERSAMIN, M., WAITERS, E. & KEEFE, D. B. 2005. Alcohol advertising: what makes it attractive to youth? *Journal of health communication*, 10, 553-565.
- CHUNG, P. J., GARFIELD, C. F., ELLIOT, M. N., OSTROOF, J., ROSS, C., JERNIGAN, D. H., VESTAL, K. D. & SCHUSTER, M. A. 2010. Association Between Adolescent Viewership and Alcohol Advertising on Cable Television. *American Journal of Public Health*, 100, 555-562.
- DE BRUIJN, A. 2011. Alcohol marketing practices in Africa-findings from Gambia, Ghana, Nigeria and Uganda: monitoring alcohol marketing in Africa MAMPA project. MAMPA Project No. WM.
- EWING, J. A. 1984. Detecting alcoholism. The CAGE questionnaire. *JAMA*, 252, 1905-7.
- FIN. 24 & NEWS., B. A. F. 2013. *Booze ad ban: SA will lose out on R5.7bn*. [Online]. Fin24. Available: www.fin24.com.
- FLISHER, A. J., ZIERVOGEL, C. F., CHALTON, D. O. & ROBERTSON, B. A. 1993. Risk-taking behaviour of Cape Peninsula high-school students. Part I. Introduction and methods. *SAMJ*, 83, 467-473.
- GORDON, R., HARRIS, F., MARIE MACKINTOSH, A. & MOODIE, C. 2011. Assessing the cumulative impact of alcohol marketing on young people's drinking: Cross-sectional data findings. *Addiction Research & Theory*, 19, 66-75.
- GRUBE, J. W. & WALLACK, L. 1994. Television Beer Advertising and Drinking Knowledge, Beliefs, and Intentions among Schoolchildren. *American Journal of Public Health*, 84, 254 -259.
- HEALTH AND DEVELOPMENT AFRICA 2011. Protocol: The Third HIV National Communication Survey.
- HOLLINGWORTH, W., EBEL, B. E., MCCARTY, C. A., GARRISON, M. M., CHRISTAKIS, D. A. & RIVARA, F. P. 2006. Prevention of deaths from harmful

- drinking in the United States: the potential effects of tax increases and advertising bans on young drinkers. *Journal of studies on alcohol*, 67, 300-308.
- JACKSON, M. C., HASTINGS, G., WHEELER, C., EADIE, D. R. & MACKINTOSH, A. M. 2000. Marketing alcohol to young people: implications for industry regulation and research policy. *Addiction*, 95, 597-608.
- JERNIGAN, D. H. 2009. The global alcohol industry: an overview. *Society for the Study of Addiction*, 104, 6-12.
- LEPPO, K., OLLILA, E., PENA, S., WISMAR, M. & COOK, S. 2013. Health in all policies. *Seizing Opportunities, Implementing Policies. Helsinki: Ministry of Social Affairs and Health.*
- MAGER A 2004. 'White liquor hits blacklivers': meanings of excessive liquor consumption in South Africa in the second half of the twentieth century. *Social Science & Medicine* 59, 735-751.
- MEDICAL RESEARCH COUNCIL OF SOUTH AFRICA 2003. A Profile of Fatal Injuries in South Africa. Fourth Annual Report of the National Injury Mortality Surveillance System. Pretoria MRC.
- MINISTRY OF TRADE AND INDUSTRY 2015. National Liquor Policy Review: A discussion document for public consultation. In: DEPARTMENT OF TRADE AND INDUSTRY (ed.). Pretoria: Government Printing Works.
- MNGADI, P. T. & SENKUBUGE, F. 2014. Effects of alcohol advertising on adolescent alcohol use: A systematic review [Unpublished]: School of Health Systems and Public Health, University of Pretoria, South Africa
- MORGENSTERN, M., ISENSEE, B., J.D., S. & HANEWINKEL, R. 2011. Attitudes as Mediators of the Longitudinal Association Between Alcohol Advertising and Youth Drinking. *Arch Pediatr Adolesc Med*, 165, 610-616.
- MYERS, B., KLINE, T. L., BROWNE, F. A., CARNEY, T., PARRY, C., JOHNSON, K. & WECHSBERG, W. M. 2013. Ethnic differences in alcohol and drug use and related sexual risks for HIV among vulnerable women in Cape Town, South Africa: implications for interventions. *BMC Public Health*, 13.
- NELSON, J. P. 2010. Alcohol advertising bans, consumption and control policies in seventeen OECD countries, 1975-2000. *Applied Economics*, 42, 803-823.
- NELSON, J. P. & YOUNG, D. J. 2001. Do advertising bans work? An international comparison. *International Journal of Advertising*, 20, 273-296.
- NIELSEN, S. A. 2014. *RE: Arianna Post Campaign Data on Alcohol Advertising on Television in South Africa.*
- OMARDIEN, R. G., REDDY, S. P., JAMES, S., KAMBARAN, N. S., SIFUNDA, S., ELLAHEBOKUS, A. & SEWPAUL, R. 2013. Umthente Uhlaba Usamila: The 3rd South African National Youth Risk Behaviour Survey 2011. Pretoria: HSRC.
- ONYA, H., TESSERA, A., MYERS, B. & FLISHER, A. J. 2012. Adolescent alcohol use in rural South African high schools. *Afr J Psychiatry*, 15, 352-357.
- PARRY, C., BURNHAMS, N. H. & LONDON, L. 2012. A total ban on alcohol advertising: Presenting the public health case. *SAMJ: South African Medical Journal*, 102, 602-604.
- PARRY, C. D. 2005a. South Africa: alcohol today. *Addiction*, 100, 426-9.
- PARRY, C. D. 2010. Alcohol policy in South Africa: a review of policy development processes between 1994 and 2009. *Addiction*, 105, 1340-5.
- PARRY, C. D. H. 2005b. A review of policy-relevant strategies and interventions to address the burden of alcohol on individuals and society in South Africa: original article. *African Journal of Psychiatry*, 8, 20-24.

- PEER, N., BRADSHAW, D., LAUBSCHER, R., STEYN, N. & STEYN, K. 2013. Urban- rural and gender differences in tobacco and alcohol use, diet and physical activity among young black South Africans between 1998 and 2003. *Glob Health Action* 6.
- PELTZER, K., DAVIDS, A. & NJUHO, P. 2011. Alcohol use and problem drinking in South Africa: findings from a national population-based survey. *Afr J Psychiatry (Johannesbg)*, 14, 30-7.
- PELTZER, K. & RAMLAGAN, S. 2009. Alcohol Use Trends in South Africa. *J Soc Sci*, 18, 1-12.
- RAHAV, G., WILSNACK, BLOOMFIELD, K., GMEL, G. & KUNTSCHE, S. 2006. The influence of societal level factors on men's and women's alcohol consumption and alcohol problems. *Alcohol & Alcoholism*, 41, i47-i55.
- RAMSOOMAR, L. & MOROJELE, N. K. 2012. Trends in alcohol prevalence, age of initiation and association with alcohol-related harm among South African youth: implications for policy. *S Afr Med J*, 102, 609-12.
- RAMSOOMAR, L., MOROJELE, N. K. & NORRIS, S. A. 2013. Alcohol use in early and late adolescence among the birth to twenty cohort in Soweto, South Africa. *Glob Health Action*, 6, 19274.
- REDDY, S. P., JAMES, S., SEWPAUL, R., KOOPMAN, F., FUNANI, N. I., SIFUNDA, S., JOSIE, J., MASUKA, P., KAMBARAN, N. S. & OMARDIEN, R. G. 2010. Umthente Uhlaba Usamila – The 2nd South African Youth Risk Behaviour Survey 2008. Cape Town: South African Medical Research Council.
- REHM, J., ROOM, R., MONTEIRO, M., GMEL, G., GRAHAM, K., REHN, N., SEMPOS, C. T., FRICK, U. & JERNIGAN, D. H. 2004. Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Risk Factors. I 959–1108.
- SAFFER, H. & DAVE, D. 2006. Alcohol advertising and alcohol consumption by adolescents.
- SAPA. 2013 Alcohol ban will hurt economy, says Sacci. *Mail and Guardian.*, 26 Aug 2013.
- SETLALENTOA, B. M. P., PISA, P. T., THEKISHO GN, RYKE, E. H. & LOOTS, D. T. 2010. The social aspects of alcohol misuse/abuse in South Africa. *S Afr J Clin Nutr*, 23(3).
- SMITH, L. A. & FOXCROFT, D. R. 2009. The effect of alcohol advertising, marketing and portrayal on drinking behaviour in young people: systematic review of prospective cohort studies. *BMC Public Health*, 9, 51.
- STATISTICS SOUTH AFRICA 2014. National and provincial labour market: Youth. Statistical release P0211.4.2 Pretoria: Government of South Africa.
- STOKOLS, D. 1992. Establishing and maintaining healthy environments: toward a social ecology of health promotion. *American Psychologist*, 47, 6.
- VAN HEERDEN, M. S., GRIMSRUD, A. T., SEEDAT, S., MYER, L., WILLIAMS, D. R. & STEIN, D. J. 2009. Patterns of substance use in South Africa: results from the South African Stress and Health study. *SAMJ: South African Medical Journal*, 99, 358-366.
- VAN WALBEEK, C. & DALY, M. 2014. Alcohol Advertising in South Africa: A Trend and Comparative Analysis. Cape Town: School of Economics, University of Cape Town.
- WEISER, S., LEITER, K., HEISLER, M., MCFARLAND, W., PERCY - DE KORTE, F. & DEMONNER, S. 2006. A population based study on alcohol and high risk behaviour in Botswana. *PLoS Med*, 3.

- WINTER, M. V., DONOVAN, R. J. & FIELDER, L. J. 2008. Exposure of children and adolescents to alcohol advertising on television in Australia. *Journal of studies on alcohol and drugs*.
- WORLD HEALTH ORGANIZATION 1986. The Ottawa Charter for Health Promotion. *First International Conference on Health Promotion*. Ottawa, Canada: World Health Organisation.
- WORLD HEALTH ORGANIZATION 2010a. Global strategy to reduce the harmful use of alcohol. Geneva: WHO.
- WORLD HEALTH ORGANIZATION 2010b. Reduction of the harmful use of alcohol: A strategy for the African Region. Brazzaville: WHO.
- WORLD HEALTH ORGANIZATION 2011. Global status report on alcohol and health. Geneva: WHO.
- WORLD HEALTH ORGANIZATION 2014. Global status report on alcohol and health. . Geneva: WHO.
- YOUNG, C. & DE KLERK, V. 2008. Patterns of alcohol use on a South African university campus: The findings of two annual drinking surveys. *African Journal of Drug & Alcohol Studies*, 7.