Alcohol Policy and Regulation: Public Opinion amongst young adults in Khayelitsha, South Africa

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FRRBRI002

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DECLARATION

Alcohol Policy and Regulation: Public Opinion amongst young adults in Khayelitsha, South Africa

Course Code: PPH 7015W

I, Britany Ferrell (FRRBRI002), hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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THESIS ABSTRACT

Background: South Africa has one of the highest rates of alcohol consumption in the world. It is important to study public opinion of alcohol regulatory policies as it plays a crucial role in the success of policy measures. There is a dearth of research on public opinion of alcohol policies in developing countries. This study is the first to explore public opinion of older and young adults on alcohol policy in South Africa. In addition, the drinking behavior of young adults was also investigated along with its relationship with policy support.

Methods: The study sample consisted of 1728 young (n=513) and older adults (n=1215). Demographic details and opinion on 15 policy measures (Yes/No) were recorded for both groups. The survey of young adults included additional questions on drinking patterns. Univariate analysis of opinion on policy measures was performed for each group and compared using chi-square tests. Logistic regression was used to find the relationship between policy support levels and demographic factors and drinking behavior of young adults.

Results: Complete data were recorded for 567 older adults and 402 younger adults. The majority of the participants (75-80 percent) agreed on restricted availability, increased pricing and greater enforcement measures. In contrast, only 65% of the participants were in favor of increased restrictions on alcohol marketing. Older adults were more supportive of earlier closing times of bars, a raise in minimum purchasing age, as well as an increase in pricing and taxes of alcohol ($p<0.001$). Females and employed participants were found to be more likely to support alcohol policy measures. Drinking patterns and behavior of young adults significantly predicted most policy measures after controlling for demographic factors. For example, policies on restricted alcohol availability, increase in taxes, and raids were supported by participants who reported that they mostly drank at big events. In contrast, these policies were opposed by those who drink alcohol every day and almost every day along with those who drink during street bashes Support for restrictions on the purchase age of alcohol was not predicted by drinking patterns of young adults

Conclusion: It is important to increase the understanding and support of vulnerable groups, especially males and young adults, for policy measures. The relationship between drinking patterns and policy support levels indicates that regular tracking of drinking behavior is necessary for the success of these policies. The results support previous findings indicating that young people are more likely to resist alcohol regulations.

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STUDY PROTOCOL

Alcohol Policy and Regulation: Public Opinion amongst young adults in Khayelitsha, South Africa

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BACKGROUND

There is a growing interest around the world on public opinion concerning alcohol policies. However, most current research emanates from high-income countries such as Australia (Flaherty et al., 1991; Shanahan & Hewitt, 1999), Canada (Giesbrecht & Kavanagh, 1999; Giesbrecht et al., 2005; Anglin *et al*., 2001), Finland (Österberg, E., 2007), Ireland (Hope, 2006), New Zealand (Maclennan et al., 2012); Sellman & Ariell, 1996), the United Kingdom (Lancaster & Dudleston, 2001; Drummond, D.C., 2004; Kara & Hutton, 2003), the USA (Schmidt *et al*., 1990; Wagenaar & Streff, 1990; Hilton & Kaskutas, 1991; Room *et al*., 1995; Wagenaar *et al*., 2000; Harwood *et al*., 2002; Latimer *et al*., 2003) and six European countries (Sweden, Finland, the UK, Germany, France and Italy) (Hemstrom, 2002). As the alcohol industry begins to seek new growth within many low and middle income countries (LMIC) such as those found on the African continent, it is pertinent that research on alcohol policy should also follow suit (Dwazu, 2014) Alcohol policy research can be used in various ways including: to identify demographic groups that tend to support or oppose certain policies (Anglin *et al*., 2001), to plot changes in public opinion over time (Kaskutas, 1993[b]; Room *et al*., 1995; Giesbrecht *et al*., 2001), or to explore the relationship between public opinion and implemented policy (e.g. Room *et al*., 1995; Giesbrecht & Kavanagh, 1999; Anglin *et al*., 2003) (Giesbrecht et al., 2005).

On a global level, alcohol use is of great concern for public health as it is a risk factor for several major categories of disease. (Babor et al., 2003). Alcohol has been identified by the United Nations as one of the four main determinants of non-communicable diseases (NCDs), along with tobacco use, unhealthy diets, and lack of exercise. In this way, not only does alcohol contribute to violence and injury but also to various types of cardiovascular diseases (CVDs), liver diseases, and cancers (Peer et al., 2014). Numerous research studies have found that increased alcohol use results in increased risky sexual behavior, which in turn can lead to increased sexually transmitted infections (STIs), including Human Immunodeficiency Virus (HIV) (Parry, 2005 [b]; Matzopoulos et al., 2003; Olley et al., 2004; Peltzer & Ramlagan, 2009; Fisher et al., 2007; Cook & Clark, 2005). Additionally, studies have long shown that alcohol misuse during pregnancy can cause brain damage to the fetus (Schneider et al., 2007), and alcohol is a known contributory factor in mental illness (Corrigall & Matzopoulos, 2012).

In all, alcohol consumption is said to contribute to more than 60 health problems that result in an estimated 4% of all diseases worldwide (Brand et al., 2007). This figure is often much higher in LMIC, where poorer populations have a higher disease burden per liter of alcohol when compared to populations with higher incomes (Anderson et al., 2009). Further, in 2011 the World Health Organization (WHO) reported that 9% of annual deaths were attributable to alcohol related causes in young people aged 15-29

years (Ramsoomar et al., 2012). Although trends in most developed countries have shown a decrease in alcohol consumption in recent years, this is not the case with LMIC where levels of alcohol consumption continue to increase (Parry et al., 2002). This is especially true for countries such as South Africa where 33%-40% of drinkers consume alcohol at risky levels and alcohol is found to be the third largest contributing risk factor to death and disability (Norman et al., 2007). Alcohol use, particularly among young adults has been identified as an urgent public health priority in South Africa as at least half of the total population is categorized as young people under the age of 35 years (Mertens et al., 2014; Seggie, 2012). Additionally, previous research in South Africa has shown the prevalence of risky drinking to be higher in young adults aged 18-24 than in older adults (Mertens et al., 2014; Ward et al., 2005; Parry et al., 2002; Ramsoomar & Morojele, 2012; Seggie, 2012).

The vast amount of research on alcohol misuse and its associated determinants, such as drunk driving, violence and injury, and various types of NCDs, has given rise to more concerted efforts to mitigate these types of problems (Anglin et al., 2001). In general, such efforts strive towards the implementation of alcohol-related policies that, when designed correctly, prevent risky drinkers from causing harm to themselves and others, while at the same time fitting within the social norms of levels of casual drinking within a given society. (Anglin et al., 2001). Previous studies have shown regulations that prove to be most effective at reducing risky alcohol consumption include higher taxation, stricter rules regarding marketing and availability, and policing strategies such as random breathalyzer checkpoints. (Anderson & Baumberg 2006; Babor et al. 2003; Hope, 2006; Drummond, 2004). Other policies currently in practice include increased alcohol education, warning labels on products, and refusal of sale to intoxicated customers (Wallin & Andreasson, 2005; Giesbrecht & Kavanagh, 1999; Hope, 2006). In South Africa, alcohol policy and regulation are still evolving. Although efforts have been made with educational campaigns, marketing restrictions, and warning labels, this legislation has not shown a significant effect on decreasing alcohol misuse (Parry, 2005 [a]; Peer et al., 2013).

It is often the case that policy implementations are most successful when they are in line with what the public supports. This scenario seems to hold for alcohol-related policies as well (Kaskutas, 1993 [a]; Hope, 2006; Maclennan et al., 2012; Room, 2012; Wallin & Andreasson, 2005). However, In addition to public support, alcohol control policies must also find a way to prevent alcohol related harm while at the same time protecting alcohol's ambiguous role as a material good (Lawhon & Herrick, 2013; Smith, Atkin, & Roznowski 2006). For example, in South Africa, risky drinking has been shown to be associated with increased rates of violence; but at the same time illicit alcohol sales are an important source of income for tavern owners within poor communities (Faull, 2013). In this way, alcohol control policies within a given

country are often complex and multidimensional (Matzopoulos et al., 2008), and public health interventions are generally most effective when researched and implemented at a community level (Maclennan et al., 2012; Wagenaar et al., 2000; Wagenaar, Toomey, & Erickson, 2005).

Previous studies have found a number of factors, including own alcohol use, to be associated with alcohol policy opinion (Room *et al.*, 1995; Bongers *et al.*, 1998; Latimer *et al.*, 2001; Anglin *et al.*, 2003; Giesbrecht *et al.*, 2005; Wallin & Andréasson, 2005), educational level (Room et al., 1995; Bongers et al., 1998; Latimer et al., 2001; Anglin et al., 2003; Giesbrecht et al., 2005; Wallin & Andréasson, 2005; Holmila et al., 2009; Van der Sar et al., 2011), as well as gender and age (Room *et al.*, 1995; Bongers *et al.*, 1998; Giesbrecht & Greenfield, 1999; Giesbrecht *et al.*, 2005; Wallin & Andréasson, 2005; Holmila *et al.*, 2009). The majority of these studies have been conducted in North America (Giesbrecht & Greenfield, 1999; Giesbrecht et al., 2005; Greenfield et al., 2007; Wagenaar et al., 2000), Europe (Ahlstrom & Osterberg, 1992; Hemstrom, 2002; Pendleton et al., 1990; Van der Sar et al., 2011), Australia (McAllister, 1995; Wilkinson et al., 2009), and New Zealand (Casswell et al., 1989; Massey University Department of Marketing, 2007; Maclennan et al., 2012 [b]). However, there is a dearth of published research describing public opinion on alcohol regulation, particularly in the South African context. An enhanced understanding of community perceptions is, therefore, an important knowledge gap that needs to be addressed within South Africa and in other developing countries.

STUDY SETTING

This study was conducted in Khayelitsha, a township located in the Western Cape Province of South Africa. Khayelitsha (the IsiXhosa word for New Home) was established in 1983 and is located about 35 km outside of Cape Town. It is home to more than 400,000 residents, making it the second largest informal settlement in South Africa. (Matzopoulos, 2015; Towards a Safer Khayelitsha, 2014). Police have estimated that within Khayelitsha there are over 1400 illegal drinking establishments, known as 'shebeens', currently in operation compared to only 35 licensed liquor outlets (Towards a Safer Khayelitsha, 2014). This practice may be traced back to apartheid, when black South Africans were prohibited from purchasing, consuming, or selling "European liquor". This resulted in many small home brewing establishments operating within the townships, especially in those that were newly formed on the outskirts of Cape Town. Although apartheid has ended and these bans have been lifted, the culture of illicit brewing and selling is still practiced in unlicensed shebeens in Khayelithsa and throughout the rest of South Africa. (Mager, 1999; Lawhon & Herrick, 2013).

RATIONALE

Previous research has shown that Cape Town consistently has the highest prevalence of risky drinking in the country (Peer et al., 2004; Peltzer et al., 2011). Additionally, the Western Cape Provincial Cabinet has identified Khayelitsha as an area with an especially high risk of alcohol related violence (Mureithi et al., 2013; Matzopoulos, 2015). Previous research has shown that populations in the poverty stricken Khayelitsha sub-district not only have higher rates of violence, but also have higher mortality rates attributable to NCDs, injury, HIV, and other communicable disease when compared to wealthier sub-districts in Cape Town (Groenewald et al., 2008). In 2011, over 60% of the population in Cape Town was estimated to be under the age of 35, with the largest sectors of the population between the ages of 20-29. (Statistics South Africa, 2011) Young adults aged 18-35 represent a critical demographic group as they have been shown to have the highest risk for alcohol related harm in the South African context (Matzopoulos et al, 2014). In addition, as they represent a substantial part of the population, young adults' opinions regarding alcohol regulation should also be explored due to the impact of this group on the socio-economic development of the country as well as their potential to influence policy (Perry et al., 2004).

AIM

This study seeks to identify the individual-level characteristics that are associated with opinions on alcohol regulation in South Africa and compare whether these are consistent among both old and young adults.

OBJECTIVES

The objectives of the study are:

1. To describe the demographic characteristics of the study population.
2. To compare acceptance among the entire study population of broad classes of alcohol regulation, such as pricing restriction, availability restriction, policing actions, or marketing restriction, by exploring the current support of individual policies that fall into these classes.
3. To describe and compare the level of support for individual alcohol regulatory policies among both young adults and older adults.
4. To explore the predictors of policy support according to demographic factors.
5. To describe the drinking pattern and behavior of young adults.
6. To assess whether drinking patterns and behavior in young adults is predictive of policy support.

METHODS:

Study Design

This is a cross-sectional study that draws on quantitative data collected from a random household survey conducted as part of an IDRC-funded evaluation project to assess the effectiveness of the Western Cape Liquor Act (WCLA). The larger study, hereafter referred to as "the WCLA evaluation project" is being conducted by the University of Cape Town in collaboration with the Violence Prevention through Urban Upgrading and the Western Cape Department of Health, along with several other research agencies including the Medical Research Council and the Health Systems Trust. For the current study, a selection of the data, pertaining to the questions on alcohol policies and interventions along with selected covariates, will be extracted and prepared for further analysis. All the methodologies described in the current protocol pertain to those in the WCLA evaluation project.

Population and Sampling

1200 households were randomly selected using GIS data of dwelling units in the designated study area within Khayelitsha.

Data Collection Instruments

Two questionnaires were utilized for data collection. The 'Main Household Questionnaire' provided demographic information and a comparative opinion on alcohol policies and interventions. The 'Young Adult Questionnaire' focused on safety risks including illegal access to, and consumption of, alcohol, and access to, and carrying of, weapons, It also included information on demographics (age and gender), education, employment, alcohol (drinking patterns and availability) and awareness and attitudes regarding alcohol policies and interventions.

Individual Respondent Selection

For the Main Household Questionnaire, the head of the household, usually the oldest female, was asked to answer the questions. However, when a female was unavailable the oldest male in the household was used as a substitute. The head of the household was then asked to list all household members and dates of births. This list was used to identify the young adult who was born closest to June 1990. The latter individual would be the one who answered the questions on the Young Adult Questionnaire. It was possible that there could be more than one Young Adult Questionnaire answered in one household, it was also possible that there were no young adults present in a household and therefore no questionnaire completed.

Fieldwork

Fieldworker training included an overview of basic fieldworker roles, behavior, and responsibilities. Researchers reviewed and practiced each question with the fieldworkers and reviewed the process to locate the selected households. During fieldwork, supervisors directed the fieldworkers to these households using printed maps of their designated area. Completed questionnaires were collected and collated by a fieldwork coordinator at least once a week.

Data Capturing and Cleaning

Data capturing was carried out at the Medical Research Council (MRC), which provided the dataset on an Excel spreadsheet. Data were imported to a STATA 11 (STATA for Windows, version 11, Stata Corp; College Station, TX, 2009) file where they were coded and cleaned.

Data Validation

Supervisors were responsible for the quality control of each fieldworker's questionnaires before submitting them to the fieldwork coordinator. Additionally, each week the fieldwork coordinator would choose five respondents to call and verify that interviews were conducted successfully. During these phone calls, the fieldwork coordinator would confirm that that fieldworker had been to the interview at the reported time, acted in a professional manner, and that the questionnaire was completed accurately (Unpublished Report).

Variables

The current study will utilize selected variables from the household survey. For both young and older adults, the study will utilize basic demographic characteristics including age, gender and employment status all of which is found in section 2.1 of the Main Survey. In addition, variables on alcohol policy will also be utilized for both the young and older adults found in section 5.1 of the Young Adult Survey and 7.12 of the Main Survey, respectively. For young adults only, the study will utilize additional information on drinking behaviors, including frequency of alcohol consumption, drinking venue and risky drinking behavior. These variables have been extracted from sections 4.1-4.5 of the Young Adult Survey.

The independent variables include unweighted individual alcohol policy survey questions and are treated as unique outcomes. Outcomes have also been grouped into broad classes of alcohol regulation as described in Table 1 for the purposes of analysis.

Table 1: Statements categorized into alcohol policy measures.

Availability	a) A purchase age of 21 years b) Restriction on numbers of alcohol outlets in your community c) Earlier closing times for bars/taverns/shebeens and nightclubs d) Earlier closing times for buying alcohol from bottle shops and supermarkets
Pricing	e) An increase in the price of alcohol f) An increase in alcohol taxes to pay for alcohol treatment g) An increase in alcohol taxes to lower other taxes h) An increase in alcohol taxes to pay for any government purpose i) Taxing drinkers to pay for the cost of alcohol related harm to society
Policing	j) More random breath testing k) More police raids of shebeens
Marketing	l) Restrictions on alcohol marketing/ advertising on TV and radio m)Restrictions on alcohol marketing/ advertising on billboards n) Restrictions on alcohol marketing/ advertising through sponsorship o) Restrictions on alcohol promotions

The independent and dependent variables along with their characteristics are summarized below in Table 2.

Table 2: Independent and Dependent Variables.

VARIABLE	DESCRIPTION	VALUES	NOTES	YOUNG ADULTS ONLY?
Independent variables (predictors)				
Age	Continuous	18-90	Age in years	No
Gender	Binary	*Male* or *Female*		No
Employment Status	Binary	*Yes* or *No*	*Older adult* study subjects had the option of declaring informal *employment* and/or *formal employment*. Either responses are treated as *yes* during data analysis.	No
Frequency of alcohol consumption	Categorical	*every day*, *almost every day*, *weekly*, *monthly*, less than *monthly*, *never*, *don't know*, and *refuse to answer*.		Yes
Drinking venue	Categorical	*home*, *friend's homes*, *shebeen*, *tavern*, *street bash*, or *other*.		Yes
Risky drinking behavior	Categorical	*0 drinks/non-drinker*, *1-2 drinks*, *3-4 drinks*, and *5 or more drinks*.	0 drinks indicates a non-drinker, 1-2 drinks indicates a light drinker, 3-4 drinks indicates a moderate drinker, and 5 or more drinks will be classified as a heavy or binge drinker.	Yes
Dependent variables (outcomes)				

Purchase age of 21 years	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of availability	No
Restriction in number of alcohol outlets in your community	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of availability	No
Earlier closing times for bars/taverns/shebeens and nightclubs	Categorical	"*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of availability	No
Earlier closing times for buying alcohol from bottle shops and supermarkets	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of availability	No
An increase in the price of alcohol	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of pricing	No
An increase in alcohol taxes to pay for alcohol treatment	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of pricing	No
An increase in alcohol taxes to lower other taxes	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of pricing	No
An increase in alcohol taxes to pay for any government purpose	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of pricing	No

Taxing drinkers to pay for the cost of alcohol related harm to society	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of pricing	No
More random breath testing	Categorical	"*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of policing	No
More police raids of shebeens	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of policing	No
Restrictions on alcohol marketing/ advertising on TV and radio	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of marketing	No
Restrictions on alcohol marketing/ advertising on billboards	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of marketing	No
Restrictions on alcohol marketing/ advertising through sponsorship	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of marketing	No
Restrictions on alcohol promotions	Categorical	*Yes*, *No*, *Don't know*, and *Refuse to answer*.	Measure of marketing	No

ANALYSIS PLAN:

To address objectives 1, 2 and 3, univariate analysis of predictors and outcomes will be performed. Analysis will be performed for the entire study population and sub-analysis will be performed with stratification of study population by the following age groups: "young adults" and "older adults." Univariate analysis of categorical variables will include the absolute number and proportion of each associated value. Univariate analysis of continuous variables will include mean and standard deviation. For categorical variables, Chi-Squared test (or Fisher's Exact Test for small samples) will be used to compare differences between "young adults" and "older adults" groups. The standard p-value < 0.05 will be accepted as statistically significant. For continuous variables, Student's T test will be used to compare differences between "young adults" and "older adults" groups. The standard p-value < 0.05 will be accepted as statistically significant. Outcomes will be grouped into broad areas of regulatory policy, including "pricing restriction," "availability restriction," "policing actions," or "marketing restriction" for qualitative analysis of trends in support of these broad areas. To address objectives 4, 5 and 6, binary logistic regression analyses will be performed to determine association of predictor and outcomes. Categorical outcome variables will be converted to binary dummy variables for the purpose of regression. "Yes" values will be coded as 1; "No" values will be coded as 0. "Don't know" or "Refuse to answer" values will be excluded from analysis as this neither represents an affirmative or negative opinion of the alcohol regulatory policy in question. Odds ratios for association will be reported. The standard p-value < 0.05 will be accepted as statistically significant. All data processing and analysis will be performed with Microsoft Excel and SPSS Statistical Software (SPSS Statistics, 2015).

ETHICAL CONSIDERATIONS

The basic principles of the South African Medical Research Council and University of Cape Town Health Research Ethics (which include autonomy, beneficence, non-maleficence and Justice) will be observed. Ethical approval for the WCLA evaluation project and the survey data that this study utilises has already been granted by the Health Research Ethics Committee of the Health Sciences Faculty of the University of Cape Town (HREC Ref: 476/2012). All data that will be utilized in this study have been collected with signed informed consent from each individual participant. Additionally, all data are securely stored and will only be accessed electronically for the current research. When data are accessed remotely, all identifying factors will be removed before the data are saved on a personal password-protected computer. Since this study utilizes previously collected data, there will be no interaction with human subjects and therefore no additional potential risks.

FEEDBACK AND DISSEMINATION OF RESULTS

The results of this study will be submitted to a peer-reviewed journal for publication. Additionally, results will be disseminated to the WCLA evaluation project team so that the findings of this study can be used within their project to form broader conclusions

IMPLICATION FOR POLICY AND PRACTICE

The end goal for alcohol policy is to improve the public health within the community and to prevent harm from being caused to oneself or to others (Anderson et al., 2009). The results of this study can be used to identify sub-groups within South Africa's young adult and older adult populations who may be particularly supportive of, or in opposition to, specific measures of alcohol policy (Wagenaar et al., 2000). As policy in general needs the support of the public to succeed, the results found in this study will be helpful to monitor opinions within the South African context, and may prove valuable for further national alcohol policy development (Van der Sar et al., 2012).

BUDGET

The subject matter of this study and the data that have been utilized emanate from a research grant undertaken for the International Development Research Center (IDRC) in collaboration with the Western Cape Department of Health (WCDoH). Since this study relies on data that have been previously collected as part of the WCLA evaluation project of which the costs have already been provided for, no additional expenses are anticipated.

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PART B: LITERATURE REVIEW

Introduction

Alcohol is the third leading cause of death and disability, accounting for 5.5% of disability adjusted life years (DALYs) lost globally, as reported by a 2010 analysis of 67 risk factors (Lim et al., 2012). Further disaggregation of the data from this same study revealed that alcohol was the leading risk factor contributing to death and disability in people aged 15-49 years old as well as the leading risk factor in Southern sub-Saharan Africa (Lim et al., 2012). In 2011, the World Health Organization (WHO) identified South Africa as having one of the highest alcohol consumption rates per capita in the world, with South Africans consuming in excess of five billion liters of alcohol annually (Seggie, 2012). Consumption rates amongst drinkers are considerably higher given the report that up to 45% of men and 70% of South African women are estimated to be alcohol abstainers (Parry, 2005 [b]). Such findings support the call by the WHO for countries to give greater priority to addressing harmful alcohol use via public health evidenced-based intervention strategies at a population level. (World Health Organization, 2010). Such strategies often include policies that regulate alcohol pricing, availability, and marketing and also sometimes through increased policing measures (Parry et al., 2011). Over the past three decades, research on alcohol policy has steadily increased, allowing public health professionals and policy makers alike the ability to understand alcohol problems and identify the most effective policy responses at a population level (Drummond, 2004; Giesbrecht et al., 2005). Currently, most of the research on alcohol policy emanates from high-income countries. Considering the shift and growth of the alcohol market in low and middle income countries (LMIC), research on alcohol policy and control measures should also move in the same direction (Dwazu, 2014; Giesbrecht et al., 2005). Literature on alcohol policy often examines the support of such policies within a given population of people. In general, previous research has found that the public mostly supports policies that are not intrusive to the moderate or occasional drinker (Kaskutas, 1993 [a]; Giesbrecht & Kavanagh, 1999). However, in a given community or society, opinions vary among different sectors of the population, and as research suggests, alcohol control policy is found to be most highly supported among older-adults, females, and infrequent or non-drinkers (Wallin & Andreasson, 2005; Van der Sar et al., 2012).

This dissertation examined support of alcohol control policies within an at-risk population group in a South African Township and analyzed possible determinants that may be associated with shaping such opinions. The aims of this literature review were:

1) To synthesize the global burden of alcohol in terms of public health, highlighting the parts of the world and the specific parts of populations that are most at risk.
2) To review previous research on public health interventions and implementation of alcohol-related policies.
3) To critically examine and summarize published works that have previously identified determinants that may be associated with an individual's opinion on alcohol policy and regulation.

Search strategy

To find previous studies relevant to this research the following search engines were utilized: Google Scholar, PubMed, Science Direct, Scopus, and Medline. Bibliographies of many particularly relevant articles were also reviewed to find additional sources.

Selection criteria

This literature review includes research studies, systematic reviews, journal articles, documents published by the WHO and by the SA government, as well as articles from South African local media. Only studies that were available in English were included.

Search key words

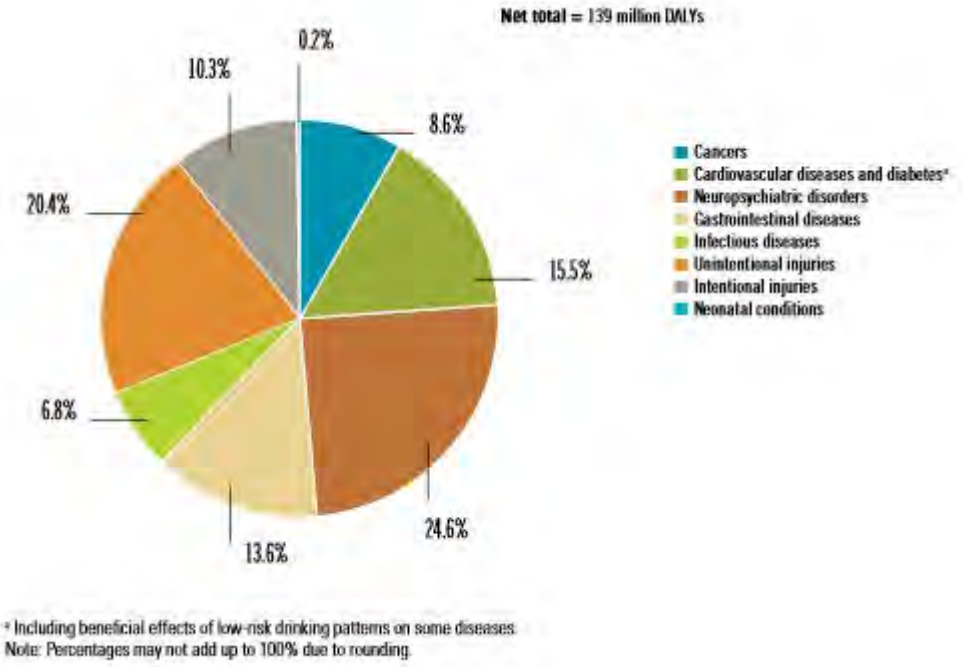
The literature search was conducted using the following key words and phrases: Alcohol and public health, global burden of alcohol, young adults and alcohol, South Africa and alcohol, alcohol policy, opinion of alcohol policy, South Africa risky drinking, Cape Town alcohol policies, Cape Town and risky drinking,

types of alcohol policy, burden of alcohol on other diseases, perceptions of policy, young adults and Cape Town.

Global burden of alcohol and at risk populations

Although patterns of alcohol consumption and rates of alcohol related problems vary extensively globally, the burden of disease and death attributable to alcohol remains a significant challenge in almost every country (WHO, 2014). Alcohol is shown to be on the causal pathway to over 200 diseases and injury conditions which together cause approximately 3.3 million deaths every year worldwide. In 2012, alcohol accounted for 5.9% of all global mortality, with the highest numbers on deaths arising from cardiovascular diseases, accidental injuries, gastrointestinal diseases (i.e. liver cirrhosis), and cancers as seen in Figure 1 (WHO, 2014).

Figure 1: Distribution of alcohol-attributable burden of disease, as a percentage of all alcohol-attributable DALYs lost by broad disease category, 2012 (Adapted from WHO, 2014).



Apart from environmental factors, alcohol related morbidity and mortality is often determined by volume of alcohol consumed and drinking patterns, especially that of heavy episodic drinking (HED) (Room et al., 2005). Studies show that alcohol consumption rates have decreased in developed countries in recent years. However, the opposite is true for many developing countries. This could be due to factors such as shifting from home-brews to industrial brews, greater availability and accessibility to purchase alcohol, as well as new affluence in rising middle-class populations (Parry et al., 2002). As alcohol consumption increases within a population, so too does the prevalence of heavy drinking along with the rate of alcohol related harm

According to the WHO Global Status Report on Alcohol and Health (2014), on a global level, individuals 15 years and older are likely to drink an average of 6.2 liters of pure alcohol per year. When looking at each country at an individual level, the actual amount varies from parts of Europe, the Americas and Australia having the highest rates of consumption while the lowest rates of consumption being found in the Middle East, Asia and Africa (Figure 2) (WHO, 2014). . A great deal of the variation in alcohol consumption from one country to the next depends on the proportions of individuals who abstain from drinking altogether (Babor, 2010). Hence, it is also important to look at abstention rates (Figure 3) in each country when interpreting the per capita rate of consumption. In this way not only does the per capita rate of alcohol consumption decrease when the rate of abstention increases, but also a higher abstention rate means that there will be a much higher rate of consumption per actual drinker (WHO, 2014; Peltzer & Ramlagan, 2009).

Figure 2: Per capita total alcohol consumption (15+ years; in liters of pure alcohol), 2010 (Adapted from WHO, 2014)

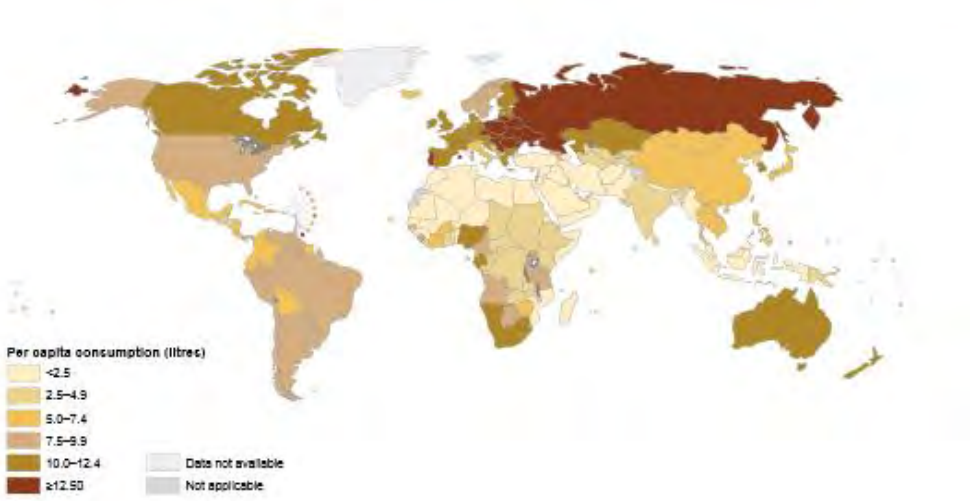
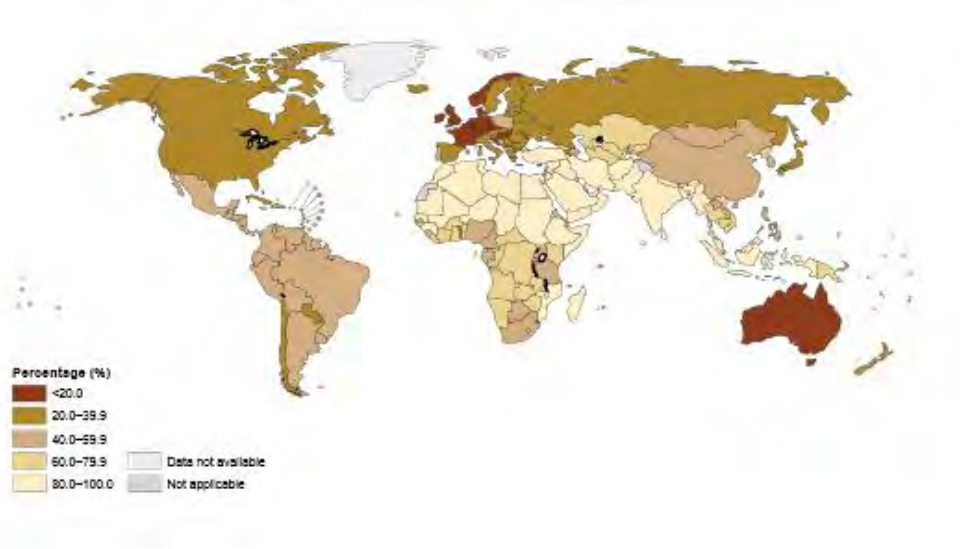


Figure 3: Prevalence of past 12 months abstention (%; 15+ years), 2010 (Adapted from WHO, 2014).



For example, South Africa is shown in Figure 2 to have an high per capita consumption rate of about 11.0 liters of pure alcohol in a year, while at the same time more than half (59.4%) of the population reported abstaining from alcohol at least during the past 12 months (42% lifetime abstainers). Therefore, the consumption rate per actual drinker is estimated to be 27.1 liters (32.8% for men and 16% for women) of pure alcohol a year in ages 15 and older. This puts South Africa among the top 10% of all countries when

ranked by liters consumed by current alcohol drinkers only (Table 1). Also among this list, are 9 other African Countries, 2 Middle Eastern Countries, and 5 Asian Countries. Only 3 countries on this list belong to Europe and the Americas which shows that although their total per capita consumption rates may appear higher, the actual amount is spread more evenly across the population when compared to the Asian, Middle Eastern, and African countries that boast high rates of abstention (WHO, 2014).

Table 1: Top 10% of all countries based on per capita consumption rate for drinkers only (Abridged version; see appendix for full list. Data extracted from WHO, 2014)

	Country	Alcohol per capita (15+) consumption (in litres of pure alcohol), 2008-2010			Abstainers (%), 2010			Total alcohol per capita (15+) consumption, drinkers only (in litres of pure alcohol), 2010			
Rank		Male	Female	Total	Male	Female	Total	Male	Female	Total	Region
1	Chad	7.1	1.8	4.4	81.1	92.6	89.9	37.5	24.7	33.9	Africa
2	United Arab Emirates	5.5	0.8	4.3	84	95.4	87	34.4	17.8	32.8	Middle East
3	Zimbabwe	10.8	0.8	5.7	49.7	71.7	61	21.6	2.9	31.4	Africa
4	Gambia	5.5	1.4	3.4	83.9	93.9	89	34.2	22.6	30.9	Africa
5	Tajikistan	4.3	1.4	2.8	86.1	95.2	90.7	31.1	28.3	30.3	Asia
6	Belize	14.5	2.5	8.5	54.6	88	71.4	32.1	21.2	29.8	Americas
7	Mali	2.2	0	1.1	94	98.4	96.2	36.4	2.8	29.3	Africa
8	Nepal	4.4	0.2	2.2	87.9	96.4	92.4	36.2	6.6	28.8	Asia
9	India	8	0.5	4.3	75.2	95.2	84.9	32.1	10.6	28.7	Asia
10	Namibia	16.7	5.4	10.8	50.8	70.2	61	34	18.3	27.7	Africa
11	Republic of Korea	21	3.9	12.3	44.2	66	55.2	37.6	11.5	27.5	Asia
12	South Africa	18.4	4.2	11	43.7	73.7	59.4	32.8	16	27.1	Africa
13	Ethiopia	6.2	2.2	4.2	62.3	79.9	71.2	30.1	19.9	26.5	Africa
14	Gabon	17.3	4.6	10.9	48	69.7	58.9	33.3	15	26.5	Africa
15	Tunisia	3	0	1.5	91.4	97.1	94.3	35.1	1	26.2	Africa
16	Kazakstan	15.7	5.5	10.3	50.6	69.4	60.6	31.8	18	26.2	Asia
17	Grenada	17.9	7.3	12.5	39.9	63	51.6	29.9	19.6	25.9	Americas
18	Cote D'voire	9.8	1.9	6	64.4	89.8	76.7	27.6	18.2	25.6	Africa
19	Republic of Moldova	25.9	8.9	16.8	26.9	39.7	33.7	35.4	14.8	25.4	Europe
20	Iran	1.7	0.3	1	93.7	98.1	95.8	26.9	17.8	24.8	Middle East

Findings such as those found in Table 1 led to the WHO publishing *The Global Strategy to Reduce the Harmful use of Alcohol* in 2010. This document emphasizes the finding that, although alcohol is a major contributor to death, disease, and injury on a global level, alcohol's impact seems to be greatest in LMIC. Thus, although there are more drinkers in the high income countries, alcohol related morbidity and mortality are often much more hazardous in countries with poorly developed and often unenforced regulation (Lawhon & Herrick, 2013). In general, alcohol consumers in Sub-Saharan Africa often drink in a risky or hazardous way. This includes drinking large amounts of alcohol on a single occasion, becoming highly intoxicated in public places, drinking heavily for cultural festivities, and drinking without eating solid food

at the same time (Chersich et al., 2009). South Africa in particular ranks in the top 5 riskiest drinkers in the world, as up to 40% of alcohol drinkers consume alcohol at risky levels (Corrigall & Matzopoulos, 2012).

In the past decade, several studies have examined risky drinking patterns within the South African context (Peltzer et al., 2011; Peltzer and Ramlagan, 2009; Scott-Sheldon et al., 2012; Parry, 2005 [b]; Corrigall & Matzopoulos, 2012; Chersich et al., 2009). For example, a 2011 study found that binge drinking (defined as drinking five or more alcohol drinks on the same occasion during the past month) was reported in about 9.6% of South Africans (17.1% of men and 3.8% of women) (Peltzer et al., 2011). These rates are slightly higher than those reported in the 2005 South African HIV/AIDS Behavioral Risks, Sero-Status and Mass Media Impact Survey (SABSSM II) which found risky drinking to be 7.4% overall (14.3% of men and 3.2% of women) (Peltzer & Ramlagan, 2009). The SABSSMII also identified higher rates of binge drinking for both men and women who live in urban areas (17% and 4% respectively) compared to rural areas (11% and 2% respectively). However, among current drinkers binge drinking rates were higher in rural rather than urban areas for women (26% and 19% respectively); but for men the opposite was true with urban binge drinking rates being higher than rural (37% and 34% respectively) (Peltzer & Ramlagan, 2009).

Alcohol is reported to be the most widely abused substance across South Africa and accounts for about 7% of the total disease burden (Parry & Dewing, 2006). This makes alcohol the third largest contributor to death and disability in South Africa following unsafe sexual practices and interpersonal violence; both of which can also be influenced by the consumption of alcohol ((Parry & Dewing, 2006; Matzopoulos et al., 2014). Although alcohol misuse impacts the whole nation, certain populations in SA are found to be at a higher risk than others (Peltzer et al., 2011). For example, previous research has identified the Western Cape as having the highest rates of both binge drinking and hazardous drinking compared to any other province (Peltzer et al., 2011; Peltzer & Ramlagan, 2009).In South African townships, heavy drinking typically occurs within informal drinking establishments also known as shebeens (Eaton et al., 2012). It is estimated that within the Western Cape there are approximately 30,000 illegal shebeens (Lawhon

& Herrick, 2013). These establishments are routinely found to foster an environment geared towards violence, lawlessness, and a disrespect for community rights (Lawhon & Herrick, 2013; Faull, 2013).

Alcohol policy and public health intervention strategies

Alcohol is an intoxicating substance and its consumption has many societal repercussions as it may have an effect on personality characteristics, sociocultural expectations and other associated behaviors (Anderson et al., 2009). In this way, alcohol is a causal agent for many intentional and unintentional harms that may affect many others and not only the one consuming it (Anderson et al., 2009). For example, drinking alcohol has been associated with traffic accidents related to drunk driving, suicides and homicides, recreational injuries, and increased risk for chronic diseases (Baker et al., 1992; Cargiulo, 2007; Cherpitel et al., 2003; Taylor et al., 2008). . Moreover, research has also shown alcohol consumption to be a major contributor to aggressive and violent behavior, poor job performance and absenteeism, family conflicts and deprivation, and hazardous sexual behaviors that increase the risk of HIV infection and other sexually transmitted diseases (STDs) (Bushman, 1997; Cook & Clark, 2005; Fisher et al., 2007; Gururaj et al., 2006; Kalichman et al., 2007 Mangione et al., 1999; Roche et al., 2008; Rossow, 1996).).

The last three decades have witnessed a progressive increase in the efforts by public health researchers and policy makers alike to understand the problems associated with alcohol use and to ascertain the most effective policy measures to curtail this problem in different populations (Drummond, 2004; Giesbrecht et al., 2005; Room et al., 2005). However, most of the research in this regard has remained limited to high income countries. Given the expansion of alcohol growth markets to middle and low income countries, so to should alcohol policy research begin to shift and focus in this arena as well (Dwazu, 2014; Giesbrecht et al., 2005).

In 2010, the WHO published *The Global Strategy to Reduce the Harmful Use of Alcohol* which encouraged member countries to implement evidence-based strategies to reduce the frequency of risky drinking episodes and decrease the prevalence of alcohol related disorders (Parry et al., 2011). Such

evidence-based strategies often include policies that regulate the availability, advertisement, marketing and price of alcohol as well as policing strategies such as random breathalyzer checkpoints (Anderson & Baumberg 2006; Babor, 2010; Hope, 2006; Drummond, 2004). Although alcohol education in general, for example as provided at school, has not shown significant effectiveness; the capacity building of the health system to identify people at risk and carry out interventions for harmful and hazardous alcohol consumption has proven to be a successful strategy (Parry et al., 2011; Anderson et al., 2009; Room et al., 2005).

Literature on alcohol policy often examines the support of such policies within a given population of people. In general, previous research has found that the public tends to most widely support those policies that are not intrusive to the moderate or occasional drinker (Kaskutas, 1993 [a]; Giesbrecht & Kavanagh, 1999). Alcohol policies are suggested to be most successful when they aim to regulate the harmful effects of drinkers while at the same time not being intrusive to the moderate or occasional drinker. This argument ignores the dose response effect between alcohol and some cancers that can making even moderate drinking harmful, in an attempt to garner public support. (Van der Sar et al., 2012; Giesbrecht & Kavanagh, 1999). Without public support, policy and regulation may be undermined as such was the case with the repeal of prohibition in the United States following a decline in public support (Kaskutas, 1993 [a]). Public opinion may also be the driving force to initiate policy to reduce alcohol misuse (Wagenaar et al., 2000; Tobin et al., 2011; Latimer et al., 2003). One such example is Australia, where the turn of the century witnessed increased public concern over the effects of drinking on communities. This along with the constant media attention on alcohol related violence and the heightened burden on health services and law enforcements due to alcohol related incidents led to escalating pressure on the government to take appropriate measures at all levels (Tobin et al., 2011).

However, in addition to public support, alcohol control policies must also find a way to prevent alcohol related harm while at the same time protecting alcohol's ambiguous role as a material good (Lawhon & Herrick, 2013; Smith, Atkin, & Roznowski 2006). For example, in South Africa, risky drinking has been shown to be associated with increased rates of violence; but at the same time illicit alcohol sales are

important sources of income for tavern owners within poor communities (Faull, 2013). In this way, alcohol control policies within a given country are often complex and multidimensional (Matzopoulos et al. 2008), and public health interventions are generally most effective when researched and implemented at a community level (Maclennan et al., 2012; Wagenaar et al., 2000; Wagenaar, Toomey, & Erickson, 2005).

Alcohol policy can be defined as a group of actions aimed at minimizing the health and social harms from the use of alcohol (Anderson et al., 2009). Babor & Caetano (2005), described alcohol policies as conscious work on the part of governments or non- government organizations to prevent or confine the alcohol related outcomes either by implementing strategies specific for alcohol access such as age restrictions for alcohol purchase or by allocating resources for interventions geared towards prevention or treatment efforts (Babor & Caetano, 2005). Previous research has identified a number of alcohol policy measures that may be effectively implemented to reduce the harmful effects of alcohol. (Giesbrecht & Kavanagh, 1999).

For example, the following have proved to be efficient measures for reducing alcohol-related problems:

- A minimum required age (20 years) for alcohol purchase and stringent enforcement of laws related to sale of underage persons,
- Government control of retail sales and bring unregulated outlets into regulated market,
- Restrictions on alcohol outlets density and number in a community,
- Increased excise taxation on alcohol items,
- Reducing alcohol marketing is generally considered an effect method to reduce consumption,
- Sobriety check points by law enforcement authorities,
- Lowered limit of allowed blood alcohol levels (BAC),

- Driving Licensing actions including administrative license suspension, graduated licensing for new drivers and short-term interventions for risky drinkers,
- Regulation of permissible hours and days for sale (Bakke & Endal, 2010); Maclennan et al., 2012 [b]; Wallin & Andreasson, 2005; Babor et al., 2010).

Other recommended policies in the literature include:

- A possible server liability in circumstances when alcohol is served to intoxicated persons who went on to be involved in activities harming themselves or others,
- A ban or limit on alcohol availability in public places (e.g. beaches, parks, sporting events),
- Collaboration with community organizations in order to implement alcohol safe environments,
- A restriction on advertising as to not appeal or be available to underage individuals and a ban on outdoor advertising where children may be present or in areas with increased criminal activity,
- Imposing restricting on size of alcohol containers and implementing special bottling and labelling regulations so that alcoholic beverages and their associated risks are clearly identified,
- An obligatory treatment of drink-drive individuals who are involved in repeat incidents (Parry & Dewing, 2006; Wallin & Andreasson, 2005; Room et al., 2005).

There is significant research especially from developed countries to support various policy initiatives for reducing alcohol–related harm (Herrick, 2013). For example, after implementing mandatory alcohol testing in Ireland in 2006, there was a reduction of about 22% in the number of traffic fatalities as compared to the previous year (Hope, 2006). In addition, alcohol consumption in Ireland declined for the first time in sixteen years by 6%, after government increased the tax on spirits and alcopops by 42% and 100%, respectively (Hope , 2006). Other examples include policies implemented in several countries including the USA where minimum drinking ages have been raised over the past several decades. This has

proven to be an effective measure in significantly reducing alcohol consumption and traffic casualties for the affected ages (Room et al., 2005).

Regulations setting a lower level of acceptable BAC (e.g. 0.05%) for driving, along with strict enforcement, has significantly decreased alcohol related driving fatalities (Room et al., 2005; Babor, 2010). Further lowering this to 0.02 % resulted in an added significant effect on drink-driving accidents fatalities in Sweden (Room et al., 2005). Introduction of routine use of sobriety checkpoints, where persons whom police suspect of drinking undergo a breath-test, has also proved to be an effective intervention. An Australian study indicated a 15% decrease in fatal accidents after a nationwide breathalyzer implementation and similar significant reductions have also been reported in studies from many other countries, especially in the USA (Room et al., 2005).

Determinants of policy support of alcohol control policies within a population

The *Global Strategy to Reduce Harmful Use of Alcohol* (WHO 2010) emphasizes that alcohol control policies need to raise awareness and involve participation within the community and also must improve the capacity of people and populations at large to make choices conducive for a healthier lifestyle (Herrick, 2013). The Global Strategy (WHO 2010) also advised that governments both at state and local level work within their communities to develop and implement alcohol policy in line with the public sentiment (Maclennan et al., 2012 [b]). In this context it is important to understand the determinants associated with opinion on alcohol policy and regulation within a given population and this type of research has been steadily increasing over the past few decades (Giesbrecht, et al., 2005).

Evidence generated through research shows that public opinion about alcohol policies is not consistent across the board and there are differences in opinion across different population groups in the society. Research evidence revealed that the highest level of support for alcohol public policies is likely to come from women, parents, older citizens, non-drinkers or infrequent alcohol drinkers (Wallin & Andreasson, 2005; Van

der Sar et al., 2012). A research study conducted in Australia concluded that women were more likely to support alcohol regulation policies (Tobin et al., 2011).

Various other determinants affecting people's opinion about alcohol regulation, described in literature are as follows;

Age

Research has shown that drinkers of younger age group are more likely to resist the alcohol regulation. For example; study from Europe, the Eurobarometer report showed that restrictive measures that affect young EU citizens between the ages of 15–24 years in their alcohol use e.g. price increase, lower BAC limit for young drivers, increasing minimum drinking age, are not supported by these consumers. While greater age, along with female sex and low personal alcohol use were factors that were positively associated with the public opinion on restrictive alcohol policy (Van der Sar et al., 2011).

Personal Alcohol use Pattern

Previous research has revealed that a person's views about alcohol regulation may be influenced by his/her own self-reported drinking habits. People's own alcohol use is a strong predictor of how much support they render towards alcohol regulation policies (Van der Sar et al., 2012). Alcohol policies are suggested to be most successful when they aim to regulate the harmful effects of drinking while at the same time not being intrusive to the moderate or occasional drinker (Van der Sar et al., 2012; Giesbrecht and Kavanagh, 1999). Previous research has also shown that the people with heavy drinking habits were least likely to support alcohol regulation, especially those policies that limit the availability of alcohol (Giesbrecht, et al., 2005).

Cultural acceptance of heavy drinking

Public opinion about alcohol policies have been shown to be reflective of the drinking patterns and the societal norms associated with alcohol drinking. Unrestricted availability of alcohol and increased

promotion of alcohol in any society have potential influence on public opinion for alcohol policies. (Tobin et al., 2011). Evidence from Australia and Canada has shown that with increasing accessibility and frequency of alcohol drinking, there is a parallel decrease in public support for alcohol regulation policies (Tobin et al., 2011).

Increased awareness of the alcohol harms

Another determinant of public support for alcohol regulation policies is the increased awareness of the public about personal and societal hazards associated with alcoholism. For instance in Finland, the increase in access to alcohol in 1960s led to increased rates of complications and this resulted in conversion of people's support for unrestricted alcohol access (Giesbrecht & Kavanagh, 1999). Similarly in Alberta (Canada) which had extended hours of sale due to privatized alcohol retailing, the public sentiment changed in favor of restricted hours of sales (Giesbrecht et al., 2001). Similarly, the public unrest about rising alcohol-related traffic deaths among youth during the 1970s and 1980s contributed to raising the minimum drinking age to 21 (Latimer et al., 2003).

In South Africa, implementation of alcohol regulation policies faces a complex scenario as there is continuous political tension due to an increasing number of people depending on the alcohol industry for their livelihood while at the same time the costs of alcohol related harms that have to be borne by the country continue to escalate (Lawhon & Herrick, 2013). Some of the factors described in research that specifically pertain to South Africa include;

Societal norms and attitudes

During apartheid, black South Africans were prohibited from purchasing, consuming, or selling "European liquor". This resulted in many small home brewing establishments operating within the townships, especially in those that were newly formed on the outskirts of Cape Town. Although apartheid has ended and these bans have been lifted, this culture of illicit brewing and selling still exists in unlicensed and informal drinking establishments known as shebeens (Mager, 1999; Lawhon & Herrick, 2013).

Low educational level and risky sexual behavior

Although studies indicate a positive association between alcohol use and education, there is also an association between risky drinking and low educational attainment (Dawson et al., 2005). For example, in 2005 the SABSSM II found that binge drinking was most commonly associated with current drinkers who had lower levels of education (Peltzer et al., 2011). Previous research has also shown that there exists a link between binge-drinking and high risk sexual behavior, this factor is especially alarming in case of South Africa with its high HIV infection rate (Parry et al., 2004).

Younger age group (adolescents and younger adults)

Similar to findings in other countries, adolescents and young adults in South Africa are susceptible to marketing that portray alcohol as a commodity and as a sign of success and therefore tend to be relaxed regarding their views on alcohol consumption and risky drinking (Setshedi & De La Monte, 2011).

Unemployment and low socio-economic status

A recent South African study had similar findings to a comprehensive literature review that explored the association of risky drinking among the employed and unemployed (Henkel, 2011; Peer et al., 2014). These studies reported risky alcohol drinking to be more prevalent among those who are unemployed (Henkel, 2011; Peer et al., 2014). This association along with high rates of poverty in South Africa promote the production and sale of cheap home- brewed alcohol as a source of income, thereby also contributing to problem drinking (Peer et al., 2014). A summary of the determinants for public support for alcohol regulatory policies is presented in Table 2.

Table 2: Determinants of public support for alcohol regulatory policies

Variable	Determinants for public support for alcohol regulation	Effect on support for alcohol regulatory policies
Age	Younger age group Older age group	Less support More support

Gender	Male Female	Less support More support
Employment status	Unemployed Employed	Less support More support
Socioeconomic status	Low High	Less support More support
Educational level	Low educational level High Educational level	Less support More support
Alcohol consumption patterns	Heavy drinkers Less drinkers	Less support More support
Societal acceptance of drinking	More acceptance Less acceptance	Less support More support
Risky sexual behavior	Present Absent	Less support More support
Awareness about alcohol harms	Increased awareness Less awareness	More support Less support

Conclusion

In conclusion, this review highlights the harms associated with alcohol consumption from a public health perspective both globally and in South Africa. In addition, it also draws attention to the difference between alcohol consumption rates per capita and consumption rates in drinkers only. This places South Africa in the list of countries with highest alcohol consumption rates. The spread of risky drinking behaviors in South Africa is also discussed.

This review has also explored the determinants of policy support that were identified in previous research including age, gender, drinking behavior education, and employment status. However, there remains a gap in the research that is currently available regarding opinions on alcohol policy from the populations in middle and low income countries. Since most of the current literature addresses high income countries, there is a dire need to study alcohol regulatory policies and undertake robust research in developing countries. This will help identify, customize and implement alcohol policy measures in accordance with the culture and socioeconomic status of these countries.

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PART C: MANUSCRIPT

No. Tables: 9

No. Figures: 0

Alcohol Policy and Regulation: Public Opinion amongst young adults in Khayelitsha, South Africa

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Background: Research on alcohol policy remains relevant as the alcohol industry seeks new growth within low and middle income countries (LMIC). Policy implementations are most successful when in line with public support. We explored comparatively the individual-level characteristics associated with opinions on alcohol regulation in South Africa among young adults aged 18-35 that experience the highest risk for alcohol related harm in Khayelitsha, a low-income neighborhood.

Methods: A secondary analysis of quantitative data from a cross-sectional, random household survey of 1200 households. The sample consisted of 1728 participants including both young (n=513) and older adults (n=1215).

Analysis: We conducted univariate analysis of predictors and outcomes, and binary logistic regression to determine associations.

Results: 80% supported pricing measures, shebeen raids and alcohol availability restrictions, with lower support for increased prices (78.7%) and increased alcohol taxes to lower other taxes (78.3%). 65% supported restrictions on alcohol marketing. Young adults were less supportive than older adults ($p<0.001$) of increased alcohol pricing and taxes. Young adults drinking patterns significantly predicted 12 policy measures after controlling for demographic factors

Conclusions: Although support was lower among young adults compared to older adults, the vast majority of the study population supported all of the restrictive policy measures. Of 15 policy measures, alcohol marketing restrictions was least supported. The results support previous findings that young people are more likely to resist alcohol regulations and reinforces the need to assess the opinion of high risk groups for alcohol related harm to understand and increase their support for policy measures.

INTRODUCTION

A 2010 analysis of 67 risk factors found alcohol to be the third leading cause of death and disability, accounting for 5.5% of disability adjusted life years (DALYs) lost globally (Lim et al., 2012) Further disaggregation of the data from this same study revealed that alcohol was the leading risk factor contributing to death and disability in people aged 15-49 years old as well as the leading risk factor in Southern sub-Saharan Africa (Lim et al., 2012). In 2011 the World Health Organization (WHO) identified South Africa as among the highest per capita consumption rates in the world, consuming in excess of five billion liters of alcohol annually (Seggie, 2012). This is especially troubling given the fact that up to 45% of men and 70% of women are estimated to be alcohol abstainers (Parry, 2005 [b]). Findings such as these, support the call by the WHO for countries to give greater priority to addressing harmful alcohol use via public health evidenced-based intervention strategies at a population level. (World Health Organization, 2010). Such strategies often include policies that regulate alcohol pricing, variously through availability, and marketing and increased policing measures (Parry et al., 2011). Over the past couple of decades, research on alcohol policy has steadily increased, allowing public health professionals and policy makers alike the ability to understand alcohol problems and identify the most effective policy responses at a population level (Drummond, 2004; Giesbrecht et al., 2005). Currently, most if not all, of this research emanates from high-income countries and, given the shift in alcohol companies growth markets to low and middle income countries (LMIC), so too should alcohol policy research begin to shift in that direction (Dwazu, 2014; Giesbrecht et al., 2005). Literature on alcohol policy often examines the support of such policies within a given population of people. In general, previous research has found that the public tends to most widely support those policies that are not intrusive to the moderate or occasional drinker (Kaskutas, 1993 [a]; Giesbrecht & Kavanagh, 1999). However, in a given community or society opinions vary among different sectors of the population, and, as research suggests, the highest support for alcohol control policy is found among older-adults, females, and infrequent or non-drinkers (Wallin & Andreasson, 2005; Van der Sar et al., 2012). Alcohol use, particularly among young adults has been identified as an urgent public health priority in South Africa as at least half of the total population is categorized as young people under the age of 35 years (Mertens et al., 2014; Seggie, 2012). Additionally, previous research in South Africa has shown the prevalence of risky drinking to be higher in young adults aged 18-24 than in older adults (Mertens et al., 2014; Ward et al., 2005; Parry et al., 2002; Ramsoomar & Morojele, 2012; Seggie, 2012). This study examined support for alcohol control policies within an at-risk population group in a South African Township and analyzed possible determinants that may be associated with shaping such opinions.

METHODS

This study was conducted in Khayelitsha, a township located in the Western Cape Province of South Africa. Khayelitsha (the IsiXhosa word for New Home) was established in 1983 and is located about 35 km outside of Cape Town. It is home to more than 400,000 residents, making it the second largest informal settlement in South Africa. (Matzopoulos, 2015; Towards a Safer Khayelitsha, 2014). There are estimated 1400 illegal drinking establishments, known as 'shebeens', currently in operation within Khayelitsha, compared to only 35 licensed liquor outlets (Towards a Safer Khayelitsha, 2014).

Study Design

In 2013, 1200 households were randomly selected using the 2012 version of geographical information systems (GIS) data for a cross-sectional study of Khayelitsha as part of two IDRC-funded evaluation projects to assess the effectiveness of the Western Cape Liquor Act (WCLA) and urban upgrading on violence prevention. The sample was designed to be approximately proportional to the size of the community. The study participants included both young and urban upgrading on violence prevention. Trained fieldworkers interviewed the head of the household, preferably the oldest female. In cases where a female was unavailable the oldest male in the household was used as a substitute. At the end of 12 weeks of fieldwork the original sample of 1200 had all been visited. Approximately 200 households had not been completed as household members either refused or were not found. An extra sample of 200 households was drawn to meet the original target. A subset of young adults between the ages of 18 and 30 were selected from the household rosters based on date of birth closest to June 1990. The final study sample consisted of 1728 participants including 1215 older adults and 513 young adults.

Measures

Data was collected using two household surveys including the Main Household Questionnaire and the Young Adult Questionnaire. The main questionnaire, answered by the head of the household, collected information about household demographics, opinions and observations about urban upgrading (physical/social), alcohol policy and enforcement; mental health and wellbeing; experience of violence; community participation and active organizations and programs. The second questionnaire administered to the subset of young adults focused on safety risks including access to and consumption of alcohol, access to and carrying of weapons, and experiences of violence.

This study utilized selected variables from the household survey. For both young and older adults, the study utilized basic demographic characteristics including age, gender and employment status. Variables on alcohol policy (Table 1) were utilized for both the young and older adults. For young adults only, the study

utilized additional information on drinking behaviors, including frequency of alcohol consumption, drinking venue and risky drinking behavior, which were not available for the heads of households.

The alcohol policy survey questions were treated as unique outcomes. Outcomes were also grouped into broad classes of alcohol regulation as described in Table 1 for the purposes of analysis.

Table 1: Statements categorized into alcohol policy measures.

Availability	a) A purchase age of 21 years b) Restriction on numbers of alcohol outlets in your community c) Earlier closing times for bars/taverns/shebeens and nightclubs d) Earlier closing times for buying alcohol from bottle shops and supermarkets
Pricing	e) An increase in the price of alcohol f) An increase in alcohol taxes to pay for alcohol treatment g) An increase in alcohol taxes to lower other taxes h) An increase in alcohol taxes to pay for any government purpose i) Taxing drinkers to pay for the cost of alcohol related harm to society
Policing	j) More random breath testing k) More police raids of shebeens
Marketing	l) Restrictions on alcohol marketing/ advertising on TV and radio m)Restrictions on alcohol marketing/ advertising on billboards n) Restrictions on alcohol marketing/ advertising through sponsorship o) Restrictions on alcohol promotions

Statistical Analysis

Demographic characteristics were described for the entire study sample and compared between the stratified age groups of young and older adults. The mean age +- SD was computed and compared between the two groups using Student's t-test. Categorical variables including gender and employment status were reported as proportion of each category (N, %) and compared using Chi-Squared test. A p-value of less than 0.05 was considered statistically significant.

To understand policy support levels among the entire study sample, univariate analysis of policy variables were performed. The percentage support for each policy in question was reported (N, %). The analysis only included the responses 'Yes' and 'No'. The response "Don't know" or "Refuse to answer" was excluded from the analysis as this neither represents an affirmative or negative opinion of the alcohol regulatory policy in question. The results were also grouped into broad areas of regulatory policy, including "pricing restriction," "availability restriction," "policing actions," or "marketing restriction" for qualitative analysis of trends in support of these areas. Since participants were allowed to skip questions they did not feel comfortable answering, the total number of respondents for each policy question varied. Therefore, the percentage support (N%) was calculated as a proportion of all the responses to the respective policy in question.

To understand the differences in support levels of young and older adults for alcohol regulatory policies, the percentage support for each group was computed and compared using Chi-Squared test. The drinking pattern and behavior of young adults were reported as percentage responses (N%) in each category.

Logistic regression was used to understand if demographic factors and drinking behavior can predict the alcohol policy support outcomes. First, to understand if there is a relationship between demographic factors and policy support, logistic regression analysis included gender, employment and age as independent variables while the dependent variable was types of alcohol policy support.

The second logistic regression analysis was performed to investigate if drinking behavior can predict policy support. Only young adults were included in the analysis and the independent variables included drinking patterns coded as dummy variables along with the demographic covariates. The Young Adult Drinking Behavior survey had a total of 394 complete responses. The dependent policy support outcomes were converted to binary dummy variables for regression. "Yes" values were coded as 1; "No" values were coded as 0. "Don't know" or "Refuse to answer" values were excluded from the analysis. Odds ratio for association was reported. All data processing and analysis was performed with Microsoft Excel and SPSS Statistical Software (SPSS Statistics, 2015).

Ethics

Ethical approval for the WCLA evaluation project and the survey data that this study accessed was previously granted by the Health Research Ethics Committee of the Health Sciences Faculty of the University of Cape Town (HREC Ref: 476/2012). All data that was utilized in this study was collected with signed informed consent from each individual participant. Ethical clearance for the secondary analysis of study data was obtained from the University of Cape Town Health Sciences Ethics Committee in July, 2015.

RESULTS

Demographic Characteristics

Completeness was extremely varied for different questions. Participants who answered all the survey questions included 567 older adults and 402 younger adults (Table 2). Older adults provided a lower percentage of complete data than young adults. Table 3 shows the demographic characteristics of the study participants.

Table 2 Missing Data characteristics.

	Older Adult	Young Adults	Total
Total n	1215	513	1728
complete data	567 (46.67%)	402 (78.36%)	969 (56.08%)

Table 3: Study Population Demographic Characteristics

	Total (n=969)	Older Adults (n=567)	Young Adults (n=402)	p-value
Mean Age (years)	36.26	41.10	23.7	< 0.0001
SD	12.98	12.02	3.38	
Gender (% Male)	25.4%	20.6%	38.3%	< 0.0001
Employed	53.0%	75.6%	19.7%	< 0.0001

Policy Support among entire study population

Although questions on policy support were optional there was a high response of more than 90 per cent. Most respondents (>77% and >83%) agreed on the suitability of restrictions on alcohol availability and policing measures, respectively, as part of alcohol regulatory policies (Table 4). There was similar support for pricing measures including price increases (75.4%) and increases in alcohol taxes to lower other taxes (74.6%). There was less support (<65%) for restrictions on alcohol marketing.

Table 4: Policy Support among entire study population.

	Policy Measure	Positive responses (% of total)	Negative responses (% of total)	"Don't know" responses (% of total)	Refused to answer (% of total)
Availability	A purchase age of 21 years (i.e. people have to be 21 years or older to be able to buy alcohol)	1338 (77.4%)	274 (15.9%)	44 (2.5%)	72 (4.2%)
	Restrictions on numbers of alcohol outlets in your community	1334 (77.2%)	250 (14.5%)	60 (3.5%)	84 (4.9%)
	Earlier closing times for bars/taverns/shebeens and nightclubs	1462 (84.7%)	148 (8.6%)	45 (2.6%)	72 (4.2%)
	Earlier closing times for buying alcohol from bottleshops and supermarkets	1445 (83.7%	155 (9.0%)	57 (3.3%)	70 (4.1%)
Pricing	An increase in the price of alcohol	1303 (75.4%)	283 (16.4%)	70 (4.1%)	71 (4.1%)
	An increase in alcohol taxes to pay for alcohol treatment	1342 (77.7%)	249 (14.4%)	59 (3.4%)	77 (4.5%)
	An increase in alcohol taxes to lower other taxes (such as income taxes)	1288 (74.6%)	294 (17.0%)	63 (3.6%)	82 (4.7%)
	An increase in alcohol taxes to pay for any government purpose (such as hospitals)	1387 (80.3%)	211 (12.2%)	50 (2.9%)	80 (4.6%)
	Taxing drinkers to pay for the cost of alcohol related harm to society	1349 (78.1%)	248 (14.4%)	51 (3.0%)	80 (4.6%)
Policing	More random breath testing (stopping drivers to check their alcohol levels)	1436 (83.2%)	163 (9.4%)	54 (3.1%)	74 (4.3%)
	More police raids of shebeens	1452 (84.1%)	150 (8.7%)	41 (2.4%)	83 (4.8%)
Marketing	Restrictions on alcohol marketing / advertising on TV and radio	1114 (64.5%)	455 (25.3%)	85 (4.9%)	74 (4.3%)
	Restrictions on alcohol marketing / advertising on billboards	1093 (63.3%)	467 (27.0%)	90 (5.2%)	77 (4.5%)
	Restrictions on alcohol marketing / advertising through sponsorship (e.g. sponsoring sports)	1028 (59.5%)	514 (29.7%)	107 (6.2%)	79 (4.6%)
	Restrictions on alcohol promotions. E.g. happy hours, free samples	1038 (60.1%)	464 (26.9%)	119 (6.9%)	106 (6.1%)

Policy Support comparison between young and older adults

Significant differences were found in the levels of policy support levels by older and young adults (Figure 1). Older adults were more supportive of earlier closing times for buying alcohol from supermarkets ($p<0.001$) and restrictions on number of alcohol outlets ($p<0.001$). When asked about increase in alcohol pricing and taxes, young adults were found to be less supportive than older adults ($p<0.001$). However, there were no significant differences between support levels of marketing restrictions. (Table 5)

Table 5: Policy Support Comparison between Young and Older Adults

	Policy Measure	Older Adults: Percent Support	OA +/- OR	Young Adults: Percent Support	YA +/- OR	p-value
1	A purchase age of 21 years	938/1172 (80.0%)	2.29	400/484 (82.6%)	3.38	0.224
2	Restrictions on numbers of alcohol outlets in your community	949/1162 (81.7%)	2.22	385/482 (79.9%)	3.58	0.406
3	Earlier closing times for bars/taverns/shebeens and nightclubs	1059/1173 (90.3%)	1.69	403/483 (83.4%)	3.32	< 0.001
4	Earlier closing times for buying alcohol from bottleshops and supermarkets	1048/1174 (89.3%)	1.77	397/484 (82.0%)	3.42	< 0.001
5	An increase in the price of alcohol	949/1173 (80.9%)	2.25	354/483 (73.3%)	3.95	< 0.001
6	More random breath testing (stopping drivers to check their alcohol levels)	1032/1171 (88.1%)	1.85	404/482 (83.3%)	3.33	0.020

7	An increase in alcohol taxes to pay for alcohol treatment	976/1169 (83.5%)	2.13	365/481 (76.1%)	3.81	< 0.001
8	An increase in alcohol taxes to lower other taxes (such as income taxes)	943/1166 (80.9%)	2.26	345/479 (72.0%)	4.02	< 0.001
9	An increase in alcohol taxes to pay for any government purpose (such as hospitals)	1011/1168 (86.6%)	1.95	376/480 (78.3)	3.68	< 0.001
10	Taxing drinkers to pay for the cost of alcohol related harm to society	973/1167 (83.4%)	2.13	376/481 (78.2%)	3.69	0.496
11	More police raids of shebeens	1038/1165 (89.1%)	1.79	414/478 (86.6%)	3.05	0.175
12	Restrictions on alcohol marketing / advertising on TV and radio	783/1174 (66.7%)	2.7	331/480 (69%)	4.14	0.387
13	Restrictions on alcohol marketing / advertising on billboards	772/1170 (66.0%)	2.71	321/480 (66.9%)	4.21	0.775
14	Restrictions on alcohol marketing / advertising through sponsorship (e.g. sponsoring sports)	729/1169 (62.4%)	2.78	299/480 (62.3%)	4.34	1.000
15	Restrictions on alcohol promotions. E.g. happy hours, free samples	729/1109 (65.7%)	2.79	296/465 (63.7%)	4.37	0.451

Demographic factors as predictors of Policy Support

The logistic regression analysis of demographic factors as predictors of policy support shows that the odds ratio for gender is significant for eight policy measures, with females being more likely than males to support restrictions on alcohol availability, pricing and raid policies (Table 6). Employed people are significantly 1.6 times more likely to support increases in purchasing age, more frequent raids on liquor

outlets and random breath testing of motor vehicle drivers. Taking into account confidence interval, the odds ratio for age does not exhibit strong associations with support for policy measures.

Table 6: Demographic factors as predictors of Policy Support

	Age OR ±(95% CI)	Gender (Male=1) OR ± (95% CI)	Employment (Yes=1) OR ±(95% CI)	Overall Significance
Purchase age of 21 years	0.98* (0.97,0.99)	0.88 (0.59,1.3)	1.6* (1.1,2.3)	0.016
Earlier closing times for bars	1.0 (0.99,1.02)	0.54* (0.35,0.82)	1.2 (0.75,1.7)	0.008
Earlier closing times for buying alcohol from bottleshops and supermarkets	1.0 (0.99,1.0)	0.44* (0.29,0.67)	1.3 (0.88,2.1)	<0.001
An increase in the price of alcohol	1.02* (1,1.03)	0.47* (0.32,0.66)	1.4 (0.96,1.95)	<0.001
More random breath testing (stopping drivers to check their alcohol levels)	1.0 (0.99,1.0)	0.678 (0.44,1.1)	1.6* (1.1,2.5)	0.019

An increase in alcohol taxes to pay for alcohol treatment	1.02* (1.0,1.03)	0.6* (0.42,0.89)	1.4 (0.96,2.0)	<0.001
An increase in alcohol taxes to lower other taxes (such as income taxes)	1.02* (1.0,1.04)	0.69* (0.48,0.99)	1.4 (0.96,1.95)	<0.001
An increase in alcohol taxes to pay for any government purpose (such as hospitals)	1.02* (1.0,1.04)	0.69* (0.48,0.99)	1.4 (0.96,1.95)	<0.001
Taxing drinkers to pay for the cost of alcohol related harm to society	1.0 (0.99,1.02)	0.5* (0.35,0.73)	1.13 (0.79,1.62)	0.001
More police raids of shebeens	1.0 (0.99,1.02)	0.62* (0.39,0.97)	1.6* (1.0,2.5)	0.012
Restrictions on alcohol marketing / advertising on billboards	1.0 (0.99,1.01)	0.78 (0.57,1.1)	1.24 (0.92,1.67)	0.048

*Statistically significant: $p<0.05$

Drinking Pattern and Behavior of Young Adults

More than half (54.8%) of the young participants reported that they had never consumed alcohol. The frequency of alcohol consumption was found to be weekly and monthly in 16.4% and 8.4% of the participants respectively. About 17.9% of the participants reported that they consume alcohol less than on monthly basis. The occasion of drinking was reported as 'Weekends' by 50.8% and 'Big Events' by 38% of respondents. In contrast, only 0.6% reported to have consumed alcohol every day. Different drinking venues were reported with Home and Friend's Home being the major venues (27.9% and 31.1 % respectively). Cider (28%) and Beer (26.3%) dominated the consumed beverage type category, followed by mixed cocktails (10.3 %) and wine (5.8%). The average beverage amount per drinking session was reported by a majority as 360 ml beer (70.4%) and 250ml malt liquor (75.2%). (See Table 7)

Table 7: Young Adults Drinking Behavior Survey Results

	% of Responses
Frequency of alcohol consumption	n=403
Every day	0.2%
Almost every day	0.5%
Weekly	16.4%
Monthly	8.4%
Less than monthly	17.9%
Never	54.8%
Don't know	1.7%
*Occasion for drinking (more than one option could be selected)	n=181
Every day	0.6%
Weekends	50.8%
Big events	38.1%
Holidays	10.5%
Usual drinking venue	n=183
Home	27.9%
Friends home	31.1%
Shebeen	15.3%
Tavern	22.4%
Street bash	3.3%

Other	0.0%
*Beverage Type (more than one option could be selected)	n=243
Cider	36.2.%
Beer	26.3%
Ready to drink (e.g. Smirnoff Ice, Bacardi Breezers)	0.4%
Home brewed	2.5%
Wine	5.8%
Fortified wines	0.4%
Mixed cocktails (e.g. brandy and cola)	10.3%
Liqueurs and cordials	0.0%
Spirits	2.5%
No alcohol	23.5%
Don't know	0.4%
Average total drinks per drinking session	n=186
360ml beer	70.4%
250ml malt liquor	75.2%
150ml wine	7.5%
100ml fortified wine	0.5%
90ml cordial/liqueur	0.0%
45ml brandy	7.0%
45ml liquor/spirit	3.2%

*may not tally to 100 as participants had the option of selecting more than one choice

Drinking patterns and behavior in young adults predictive of policy support

Drinking patterns, amount and type significantly predicted twelve policy measures after controlling for demographic factors (Tables 8 and 9). Participants who reported drinking at big events as their normal drinking venue were more supportive of earlier closing times for buying alcohol, increase in taxes and shebeen raids. In contrast, drinking on holidays did not show a significant relationship with any policy measure. Respondents who reported their usual drinking venue as a street bash were highly opposed to policy measures including earlier closing times for bars and buying alcohol, taxes and raids. Compared to other drinking amounts, respondents who drank 250ml malt were less supportive of alcohol taxing and marketing restrictions. In general, employed respondents were significantly associated with supporting

increased policy measures. The frequency of alcohol intake was not significantly related to policy measures except for those who consumed alcohol monthly who were found to be more supportive of earlier closing times for bars, and those who consumed alcohol almost every day whom did not support raids on shebeens.

Table 8. Drinking patterns in young adults and their prediction of support for alcohol policy and regulation

	Restriction on number of alcohol outlets	Earlier closing times for bars	Earlier closing times for buying alcohol	An increase in the price of alcohol	More random breath testing	An increase in alcohol taxes to pay for alcohol treatment	An increase in alcohol taxes to lower other taxes	An increase in alcohol taxes to pay for any government purpose	Taxing drinkers to pay for the cost of alcohol related harm to society	More police raids of shebeens	Restrictions on alcohol marketing / advertising on TV and radio
Overall Significance	0.00	0.00	<0.001	<0.001	0.00	<0.001	<0.001	<0.001	<0.001	0.00	0.02
Age	0.884*	1.01	1.07	0.97	0.95	0.92	0.94	1.01	0.94	0.87*	0.92*
Gender	1.24	0.71	0.67	1.54	1.38	2.965*	1.88	1.58	1.28	1.16	1.40
Employment	1.85	1.40	1.48	1.54	1.66	2.003	1.71	1.39	1.98	4.01*	1.47
Frequency											
Almost Everyday	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	1.04	0.04	0.00
Don't Know	0.82	1.82		1.05	2.75	2.43	.	.	.	.	1.87
Everyday	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00	0.00	.	0.00
Less than monthly	1.82	1.76	1.06	1.59	1.47	1.30	1.01	0.79	1.83	0.56	0.72
Monthly	1.50	3.09	1.21	0.82	1.06	1.35	1.30	0.29	0.53	0.62	1.27
Never	.	.	.	.	.	.	.	.	.	.	.
Occasion											
Big events	0.62	1.23	3.21	1.35	2.26	1.13	2.70	3.59*	1.64	4.55*	0.97
Holidays	0.74	0.94	0.69	1.12	0.56	1.26	1.73	1.23	1.62	8.87	1.02

Never	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drink Venue								*	~	*	
Friend's home	1.75	1.22	1.11	1.23	0.91	0.66	0.75	0.33	0.45	0.52	0.36
Home	2.15	0.86	0.99	2.64	1.67	1.75	2.01	1.57	1.64	1.37	1.01
Shebeen	0.60	0.64	0.37	2.63	1.02	0.39	0.85	0.38	0.58	6.47	0.64
Street bash	0.00	0.034*	0.043*	0.30	0.00	0.00	0.00	0.06*	0.06*	0.06	0.00
Higher education	0.35*	0.78	0.87	0.86	0.96	0.68	0.64	0.53	0.89	0.77	0.56
Beer	1.20	0.72	0.61	0.36	1.83	0.15*	0.19	0.29	0.08*	0.27	0.54
Cider	1.98	0.65	0.78	0.88	1.92	0.39	0.33	0.67	0.14*	0.42	0.70
Homebrew	1.94	2.50	1.71	1.23	1.69	5.92	5.36	1.71	0.70	0.35	1.04
Wine	0.72	0.68	0.88	1.75	1.11	2.32	1.86	0.93	1.52	0.16*	1.22
Spirits	2.01	1.13	1.72	0.83	1.42	0.26	2.95	0.26	0.56	0.38	0.08*
Mixed Cocktails	1.22	0.37	0.60	0.48	0.45	0.61	1.08	0.76	0.46	2.74	0.70
Fortified Wine	0.00	0.00	0.00	9.00		.	.	.	.	.	.
Ready to Drink	0.00	0.00	0.00	0.00	0.00	.	0.00	.	.	.	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.

*Statistical Significance: P<0.05

Table 9. Drinking behavior in young adults and their prediction of support for alcohol policy and regulation

	Restrictions on numbers of alcohol outlets	Earlier closing times for bars	Earlier closing times for buying alcohol	An increase in the price of alcohol	More random breath testing	An increase in alcohol taxes to pay for alcohol treatment	An increase in alcohol taxes to lower other taxes	An increase in alcohol taxes to pay for any government purpose	Taxing drinkers to pay for the cost of alcohol related harm to society	More police raids of shebeens	Restrictions on alcohol marketing / advertising on TV and radio	Restrictions on alcohol marketing / advertising on billboards	Restrictions on alcohol promotions
Overall Significance	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.009	0.03	0.02	0.002
Age	0.87*	1.01	1.06	0.96	0.94	0.92	0.94	1.00	0.94	0.88*	0.91*	0.93	0.95
Gender	1.05	0.66	0.63	0.97	1.14	1.80	1.48	1.00	0.88	1.04	1.08	1.21	1.44
Employment	2.24	1.78	1.78	1.80	2.57*	2.35*	2.27*	1.62	2.44*	3.73*	1.51	1.70	1.53
Frequency													
Almost Everyday	0.00	0.00	1.38	0.00	0.00	0.00	0.00	0.00	1.41	0.10	0.00	0.00	1.99
Don't Know	0.85	2.54	.	1.18	2.81	3.75	.	.	.	.	1.91	3.02	2.98
Everyday	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00
Less than monthly	1.83	2.07	1.25	1.62	1.89	2.07	1.20	1.47	2.64	0.51	0.49	1.01	0.72
Monthly	1.63	4.21	1.48	1.07	1.37	2.30	1.67	0.67	0.87	0.51	0.96	1.64	0.66
Never	.	.	.	.	.	.	.	.	.	.	.	.	.
Occasion													
Big events	0.49	1.08	2.54	1.35	1.82	1.05	2.25	2.20	1.33	4.29*	1.23	0.87	2.29

Holidays	0.78	1.27	0.86	2.22	0.58	3.26	5.84	1.96	4.24	4.93	1.47	1.75	4.36
Never	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drink Venue													
Friends home	3.1	2.46	1.76	1.81	1.67	0.87	1.02	0.50	0.66	0.59	0.65	0.85	0.33
Home	3.35	1.25	1.20	2.51	2.59	1.65	1.50	1.68	1.62	2.29	1.47	1.22	0.70
Shebeen	0.72	1.05	0.50	2.53	1.65	0.50	0.77	0.53	0.67	2.45	0.76	1.09	0.50
Street bash	0.00	0.01	0.08	0.41	0.00	0.00	0.00	0.01	0.12	0.06*	0.00	0.00	0.00
Higher education	0.37*	0.75	0.92	0.90	1.09	0.80	0.73	0.59	0.96	0.79	0.54	0.66	0.43*
360ml Beer	0.98	0.98	0.97	0.96	0.99	0.93*	0.92*	0.96	0.95	1.03	1.01	0.98	0.95*
250ml Malt	1.80	1.11	0.98	0.82	0.95	0.86	0.71*	0.81	0.76	1.02	1.00	0.77	0.86
150ml Wine	457.51	526.81	1064.74	1219.64	872.78	1163.33	1391.11	0.00	1525.51	763.52	985.40	1106.08	0.00
100ml Fort Wine	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 ml Brandy	1.09	1.09	0.94	1.08	1.53	1.13	1.55	1.10	1.09	1.01	1.14	1.21	1.12
45 ml Liquor	0.95	0.95	0.96	0.99	0.91	0.92	0.96	0.95	0.95	1.05	1.02	1.01	1.02

*Statistical Significance: $P<0.05$

DISCUSSION

The results of alcohol policy support levels suggest that the majority of the participants support regulations on alcohol availability, pricing and policing measures. On the other hand, although still supported by the majority of the sample, the measure with the lowest amount of support was restriction on alcohol marketing and advertisement. A previous study found that the public mostly tends to support policies that are not intrusive to the moderate or occasional drinker (Kaskutas, 1993 [a]; Giesbrecht & Kavanagh, 1999). Considering that restrictions on marketing do not typically impose on the ordinary drinker, it is surprising to find that it is the least favored policy among participants. The results may be interpreted several ways including that the marketing and promotions may benefit the social drinkers and therefore, they support alcohol advertisement or perhaps people may have become so accustomed to having marketing messages continually around them that they no longer notice these messages. Additionally marketing restrictions may not be supported as participants could think that such restrictions have benign effects, do not actually regulate harmful effects of drinking, and therefore see no benefit in supporting them. Alternatively, this lower level of support for marketing could be attributed to contextual factors within the township such that alcohol consumption is among the most accessible and inexpensive forms of entertainment, while at the same time alcohol is portrayed in marketing as a sign of success (Setshedi & De La Monte, 2011). Nevertheless, it is important to improve public understanding of the benefits of regulating alcohol marketing , as banning alcohol advertising has been found to be a cost effective approach to reduce alcohol related harm (Anderson et al., 2009).

That young adults are less supportive of many alcohol regulatory policies including pricing and earlier closing times for purchase is in line with previous studies indicating that young people are more likely to resist alcohol regulations (Van der Sar et al., 2011). Although the support of young adults was lower than that of older adults, still the vast majority supported policy restrictions. The opinion of young adults, forming half the population of South Africa (Mertens et al., 2014; Seggie, 2012), is crucial to the success of alcohol policy measures. This result calls for further interventions in South Africa to track and educate young adults with regards to the risks of drinking and the role of regulatory measures in reducing these.

The findings from the regression analysis of demographic factors are consistent with previous research showing that females and employed participants are more likely to support alcohol policy measures. (Van der Sar et al., 2011) (Peer et al., 2014). However, gender and employment are significant for different policy measures as well.

For example, Females show more support for increase in alcohol prices and taxing than males, while employed participants are more positive about restrictions on alcohol purchase age and random breath tests. The well-established determinants of alcohol policy measures in developed countries, including gender and employment, are also apparent in South Africa. Given that unemployment and males are associated with binge or risky drinking behavior (Peer et al., 2014), it is important to regularly track the opinion of these groups and try to increase their understanding and support for policy measures.

This research also explored the drinking pattern and behavior of young adults. The huge number of participants reporting abstinence from alcohol conforms to an earlier report on South Africa in which more than half of the study population reported abstaining from alcohol at least during the past 12 months (WHO, 2014). Most participants' major time for drinking was weekends and big events. This result suggests that the majority of young adults are occasional drinkers and hence likely to support policy measures as seen previously in the results of policy support levels. Notably, it was found that 15.3% of participants reported drinking in shebeens for. Illegal shebeens are popular for risky drinking environments and pose a huge risk to the well-being of young adults. Hence, although the result appears to be a small percentage of young adults, it is noteworthy and should raise concerns. Moreover, policies related to shebeen raids should be implemented to prevent the further growth of such places. Alcohol policies are sometimes criticized for interfering with the consumption of occasional or light drinkers. In contrast, our results suggest that those who drink occasionally at big events are more supportive of these policies. These results are important as this is the first time, to our knowledge, that public opinion on policy support and its relationship with drinking patterns of young adults is studied in South Africa.

One of the limitations of this study is the presence of an unbalanced gender distribution. In previous studies, men are found to be involved in more risky drinking behavior and less supportive of alcohol policy measures (Peer et al., 2014) (Van der Sar et al., 2011). Hence, our results may be biased due to the large number of female participants. Further studies with a balanced ratio of both genders should be performed. Second, despite the regression models being very significant, the odds ratio of the predictor variables were not large or highly significant. This may be due to too many variables in the model which could have masked the truly significant ones. Inter-correlated variables should be replaced by a single variable to avoid redundancies. This could also be explained by the association of magnitude for the age variable being too small as it refers to the incremental change in the outcome variable for every change in

age by 1 year. The age variable could be converted from continuous to binary (using the cut-off for younger adults and older adults). Third, our results are limited to the town of Khayelitsha and may not be generalized to the entire population. Fourth, the study did not investigate the drinking behavior of older adults. Future research on both young and older adults' drinking patterns should be performed. It will be interesting to see any differences in drinking patterns of these groups and how they affect policy support. Finally, the reliability of responses can be questioned given the social stigma associated with alcohol.

In conclusion, this is the first known study to present interesting insights to public opinion on alcohol regulatory policies in the LMIC setting of South Africa. Public support plays a vital role in alcohol regulations' effectiveness and viability in the long run. Further studies in this area can improve policy-making processes which in turn can help reduce the harm associated with drinking. This study also investigated the drinking behavior and patterns of young adults of South Africa. Tracking young adults' drinking behavior aids in targeting problem areas and prevent the increase of risky drinking behaviors in vulnerable populations. Further studies with larger populations including balanced gender should be performed to help identify and customize alcohol policy measures.

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APPENDICES

Appendix A: Main Questionnaire

Fieldworker instruction: On arrival at the correct dwelling, the female household head should be identified. If there is no female head of household a male head of household can be interviewed. This is the most senior person in the main household of the dwelling place who is able to answer on behalf of the household.

Who is present for the interview?

alone	Spouse/girlfriend/boyfriend	Older family members	Younger family members/children	Other

SECTION 1: HOUSEHOLD IDENTIFIERS

Map Ref number:			Fieldworker name:					
Date: (yy-mm-dd)			Start time: (_ _:_ _)					
Consent Form Signed:	YES	NO						
(may only continue if signed)								
Street Name:			Dwelling/site number:					
Number of dwellings on erf:								
Dwelling Type (circle one):	Single Formal Dwelling (house)	Hostel	Informal Backyard Dwelling	Informal Settlement Dwelling (not in a backyard)				
count: (# of dwellings)								
Other (specify)								
Number of households on site*:	1	2	3	4	5	6		

*Households should share food from a common 'pot' **OR** share resources from a common resource pool. If one person lives in a room on the premises and does not share resources (e.g. a tenant paying rent), then they are a household by themselves.

Household characteristics (by observation)

Electrical supply	Formal connection (i.e. Eskom distribution box)				Informal connection (no Eskom box)	No electrical supply
Floor level	Floor level is above outside level				Level with outside	Below outside level
Garden	Yes		No			
Wall material	Bricks	Blocks	Corrugated Iron	Wood	other:	

SECTION 2: HOUSEHOLD DEMOGRAPHICS

2. 1.Main Household Roster:

For the main household (defined as the most established household in the main dwelling on the erf). List all household members.

#	Name	M/F	Date of birth	age	Educational level completed					Economic contribution to household					
				(on last birth-day)	Below Grade 10	Grade 10	Matric	Diploma	University Degree	Formal job	Informal job	Disability	Pension	Child support	Self employed
1	(main respondent)		(yyyy-mm-dd)												
2			(yyyy-mm-dd)												
3			(yyyy-mm-dd)												
4			(yyyy-mm-dd)												
5			(yyyy-mm-dd)												
6			(yyyy-mm-dd)												
7			(yyyy-mm-dd)												
8			(yyyy-mm-dd)												
9			(yyyy-mm-dd)												
10			(yyyy-mm-dd)												
11			(yyyy-mm-dd)												
12			(yyyy-mm-dd)												
13			(yyyy-mm-dd)												

2

2.2. First Subsidiary Household Roster: For each of the other households:

#	Name (write unknown if unknown)	M/F	Approx. age	Years living on premises
1				
2				
3				
4				
5				
6				
7				
8				

2.3. Second Subsidiary Household Roster: For each of the other households:

#	Name (write unknown if unknown)	M/F	Approx. age	Years living on premises
1				
2				
3				
4				
5				
6				
7				
8				

2.4. Third Subsidiary Household Roster: For each of the other households:

#	Name (write unknown if unknown)	M/F	Approx. age	Years living on premises
1				
2				
3				
4				
5				
6				
7				
8				

2.5. Fourth Subsidiary Household Roster: For each of the other households:

#	Name (write unknown if unknown)	M/F	Approx. age	Years living on premises
1				
2				
3				
4				
5				
6				

7				
8				

SECTION 3: INFORMATION ABOUT THE MAIN HOUSEHOLD

We are now going to ask you questions about the people in your household and sources of income. Try to think about all the activities that the adults in your household do to earn an income.

3.1.1) Is there a business of any sort operating from the main dwelling?

Yes	No

3.1.2) If yes, which category does this business fall into?

Extractive	Manufacturing	Services	Retail
1) Animal rearing	5) Building materials	11) Car/taxi wash	19) Take away foods
2) Growing Fruit and Veg	6) Carpentry / Furniture	12) Transport	20) Vegetables/fruit/herbs
3) Herb growing	7) Clothing making	13) Communications	21) Hardware sales
	8) Construction	14) Creche/ preschool	22) Clothing sales
	9) Crafts	15) Electrical repairs	23) Shebeen
	10) Ironwork/welding	16) Hair Salon	24) Spaza
		17) Mechanical repairs	25) Selling other goods
		18) Tourism	
If **not sure**, write here:			

3.2 Who is the main contributor to household income? ___ (Their identifier number according to household roster)

3.3. Where does this person work*?

1	2	3	4	5	6	7	8	9	10
Khayelitsha	Cape Flats	Southern suburbs	Northern suburbs	City bowl	Atlantic seaboard	West coast	Southern Peninsular	Helderberg	NA (no working adults)

*Refer to appendix if unsure where area is.

3.4 Which modes of transport do they use to go to work?

	Never	Rarely (less than once a week)	Occasionally (about once a week)	Often (2 or 3 times per week)	Always

1) Car (drive their own/company car)	**1**	**2**	**3**	**4**	**5**
2) Car (Someone else's)	**1**	**2**	**3**	**4**	**5**
3) Train	**1**	**2**	**3**	**4**	**5**
4) Bus	**1**	**2**	**3**	**4**	**5**
5) Taxi	**1**	**2**	**3**	**4**	**5**
6) Bicycle	**1**	**2**	**3**	**4**	**5**
7) Walk	**1**	**2**	**3**	**4**	**5**
8) Other *(Specify)* _____	**1**	**2**	**3**	**4**	**5**
9) NA (check)					

SECTION 4: URBAN UPGRADING (PHYSICAL)

We are interested in how people's experience of their neighbourhoods and homes. The next two sections are questions about your house and infrastructure and services in your area. 4.1) How long have you been staying in your current home? (in years)_____

4.2) Do you think that you will still be living in the same dwelling in 5 years' time?

Yes	No	Not Sure

4.3) If No, why?

1	**2**	**3**	**4**	**5**
Moving closer to work	Moving for family reasons	Moving into a formal better house/neighbourhood	No choice - Eviction	Other

4.4) Are you satisfied with the condition and maintenance of the following in your neighbourhood?

4.4.1) Roads or pathways	Yes	No	Unsure	There are none/ too few
4.4.2) Storm water drainage	Yes	No	Unsure	There are none/ too few

4.4.3) Street lights	Yes	No	Unsure	There are none/ too few
4.4.4) Highmast lights	Yes	No	Unsure	There are none/ too few
4.4.5) Electrical Supply	Yes	No	Unsure	There are none/ too few
4.4.6) Refuse removal	Yes	No	Unsure	There are none/ too few
4.4.7) Green areas/vegetation	Yes	No	Unsure	There are none/ too few are none
4.4.8) Open/public spaces	Yes	No	Unsure	There are none/ too few
4.4.9) Sport and Recreation Facilities	Yes	No	Unsure	There are none/ too few
Informal Sections only:				
4.4.10) Water taps	Yes	No	Unsure	There are none/ too few
4.4.11) Toilets	Yes	No	Unsure	There are none/ too few

4.5) Were there pools from rain water inside your house last winter?	Yes	No

4.6) Where are the closest of these public facilities and in what condition are they?

[Informal areas only]

Facility	Minutes to get there and back home (0 if inside house)	Is it working?	Been broken in past 12 months?	There are none
4.6.1) Stand pipes for water				
4.6.2) Toilet that you normally use				
4.6.3) High mast light nearest to you				
4.6.4) Street light nearest to you				

[All areas]

	Minutes to get there and back (number only)	Excellent	Good	fair	bad	Very bad
4.7.1) Waste collection point						
4.7.2) Pension payout point						
4.7.3) Clinic						
4.7.4) Library						
4.7.5) Sport and Recreation Facilities						

4.8) How satisfied are you with the dwelling you are currently living in?	**1) very satisfied**
	2) satisfied
	3) neutral
	4) unsatisfied
	5) very unsatisfied

4.9) Which of the following describes your housing situation?	**yes**	**no**
Ownership/ours (Ndingumnikazi/yeyethu)		
Affordable		
Close to amenities/main roads/work		
Home is large and spacious enough		
Adequate services		
Neighbourhood is Good (obuLungileyo Ubumelwane)		
Neighbourhood is safe (Ubumelwane obuKhuselekileyo)		
Neighbourhood is clean (Ubumelwane obuCocekileyo)		
Neighbourhood is private\quiet (Ubumelwane baBucala\ obuThuleyo)		
Needs maintenance/Poor design/badly built		
Bad tenants		
Bad landlord		

SECTION 5: URBAN UPGRADING (SOCIAL)

5.1) Emotional health

INTERVIEWER READ OUT: We would like to know how your general well-being has been over the past week. I am going to read a list of some of the ways you may have felt or behaved during the last week. Please indicate how often you have felt this way during the past week.

Interviewer: Circle one number on each line

During the past week...	Rarely or none of the time (less than 1 day)	Some or little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
5.1.1 I was happy (Bendonwabile)	1	2	3	4
5.1.2 I felt hopeful about the future (Bendiziva ndinethemba malunga nekamva)	1	2	3	4
5.1.3 I was bothered by things that usually don't bother me (Bendihlutshwa zizinto ezingaqhelanga kundihlupha)	1	2	3	4
5.1.4 I had trouble keeping my mind on what I was doing (Bendinengxaki yokuzinzis' ingqondo kwinto endiyenzayo)	1	2	3	4
5.1.5 I felt depressed (Bendiziva ndixinzelelo lwengqondo)	1	2	3	4
5.1.6 I felt that everything I did was an effort (ibezinzame)	1	2	3	4
5.1.7 I felt fearful (Bendisoyika)	1	2	3	4
5.1.8 My sleep was restless (Bebungehli ubuthongo)	1	2	3	4
5.1.9 I felt lonely (Bendiziva ndililolo)	1	2	3	4
5.1.10 I could not "get going" (Bendingakwazi ukuqhubeka nobomi)	1	2	3	4

5.2. Well-being and social cohesion

INTERVIEWER READ OUT: Next, we want to ask you some questions about your relationship with your neighbours and the social interactions that you have with those around you.

5.2.1. Think about the area in which you live. How strong is your preference to continue living in this area? **Read out options if necessary**	Strong preference to stay	1
	Moderate preference to stay	2
	Unsure (no strong preference to stay or leave)	3
	Moderate preference to leave	4
	Strong preference to leave	5
	Much above average income	1

5.2.2. How would you classify your household in terms of income, compared with other households in your village/suburb? **Read out options if necessary**	Above average income	2
	Average income	3
	Below average income	4
	Much below average income	5
	Don't know	9

5.3. In the last 12 months have you:

	yes	**no**	**Don't know**
Attended a public meeting or rally			
Taken part in a public demonstration or protest			
Signed a petition			
Completed a questionnaire about local services or problems in local area			
Been actively involved in a group set up to discuss local services or problems in local area			
Been actively involved in a social/religious/hobby group such as book club or church in your area			
Been actively involved in a voluntary security-related organisation such as a neighbourhood watch or community policing forum			
Been actively involved in another voluntary organization			
Contacted a politician or public official with an enquiry other than routine contact arising from use of public services			

5.4) In the last year have you attended a community meeting to discuss urban upgrading, safety, facilities, services or any other problems or issues that impact on quality of life in your neighbourhood?

yes	**no**	**Don't know**

5.4.1.) If yes, how many times did you attend such a meeting in the last year?

_____

5.4.2) How long did it take you to reach the last meeting from your home? ____ (in minutes)

5.4.3) Did you find this meeting useful?

yes	**no**	**Don't know**

5.5. Of the children aged between 6 and 18 years in the house, how many participate in after-school activities
UNDER THE SUPERVISION of a responsible person? _____

What kinds of after-school activities do they participate in? Tick all that apply:

Sport	Arts/music/cultural	Religious	Academic enrichment	Other

5.6.) Has the city made any improvements in your neighbourhood within the past year?

NO	YES	Details: (tick below after prompting)

1	2	3	4	5	6	7
transport	safety	Housing & electricity	Services such as rubbish removal	Public spaces (e.g. walkways and fields)	Recreational/ sports facilities	Water & toilets

SECTION 6: EXPERIENCE OF VIOLENCE

The next section is about your experiences and opinions about violence. This may be difficult to talk about but it is important for us to know about the crime that is most affecting you in your area in order to see if things are improving. If you do not feel comfortable answering any question we can skip that question.

6.1) Most common crimes

Studies have suggested that the following are the most common crimes around Cape Town.

Which of the crimes below is most common in your area? [Rate 1 as most common, 2 as second most common and 3 as third most common]. If you need to, you can add another type of crime to this list.

6.2) Try think back over the past 12 months – i.e. between today and April/May 2012. Which if any of these crimes has affected you personally **in the past 12 months**?

Priority crime/violence	6.1) Most common crimes	Your own experience of crime over the past one year	6.2) Yes or No	Approx.month if recalled
Robbery/ Home invasion		Property taken from you personally with actual or threatened violence		
Petty theft / Housebreaking		Actual forced entry into your home with intention to steal		

Murder		Has anyone close to you been murdered?		
Assault with a weapon		You have been **injured** with a weapon on purpose?		
Assault without a weapon		You have been otherwise injured on purpose?		
Domestic violence/abuse		Have you experienced any form of violence or abuse within your household?		
Rape		Have you experienced being raped or were really frightened you could be raped?		
Car hijacking		Have you been hijacked or in a car that was hijacked?		
Arson		Has any property of yours been destroyed by fire started on purpose?		
Crimes targeting minority groups		Have you been the victim of or witnessed someone else being the victim of violence because of your/their nationality, gender, race, or sexual preferences?		
Drug trafficking		Have you been involved in crossfire or drug related violence?		
Community justice – i.e. vigilantism		Have you witnessed or been the target of threatened or actual community justice/mob violence?		
OTHER:_____				

6.3) Apart from the incidents just covered, have you over the past five years been personally threatened by someone in a way that really frightened you either at home or elsewhere, such as in a pub, in the street, at school, on public transport, on the beach, or at your workplace?

Yes	N	o

6.4) If so, who threatened you?

1	2	3	4	5	6

Family member	friend	Intimate partner	acquaintance	stranger	NA

6.5) On a scale of 1 to 5, how big a problem are assaults/violence in this neighbourhood?

1	2	3	4	5
The biggest problem	A big problem	One of many problems	A small problem	Not a problem

6.6.1) Does anyone in your household carry a weapon for self-defense?	**yes**	**no**	**Don't know**
6.6.2) If so, what type of weapon?	**a) Gun**	**b) knife**	**c) other**
6.6.3) If so, what times of day?	**a) all the time**	**b) some of the time**	**c) only at night**

6.7) How often do the following types of violence occur in your neighbourhood?

Type of violence	How often? 1- All the time 2 -Sometimes 3- Hardly ever 4 - Never
Violence between friends/family	
Violence between intimate partner	
Violent robberies e.g. muggings	
Gang violence	
Child abuse/neglect	
Rape/sexual violence	
Other (write down if applicable).	

6.8) Does alcohol contribute to assaults/violence in this neighbourhood?

a) Most violence is alcohol related
b) Some violence is alcohol related
c) Hardly any violence is alcohol-related

6.9) Do drugs contribute to assaults/violence in this neighbourhood?

a) Most violence is drug related
b) Some violence is drug related
c) Hardly any violence is drug-related

We are now going to ask you about involvement in violence of members of your household. This is anyone who lives here and shares in or contributes to household resources. Please think through who this includes and any incidents that they have been involved with, but only in the past year.

6.10.1) In the last 12 months has anybody in the household been involved in:
Note to fieldworker: if first answer is 'no', leave the rest blank

	yes	no	Don't know
Violence between friends or family			
Was alcohol involved			
Was there a weapon involved			
Type of weapon 1) Gun 2) Knife 3) Other: _____			
Were drugs involved			
Reported to police			
Needed to go to hospital			

6.10.2) In the last 12 months has anybody in the household been involved in:

	yes	no	Don't know
Violence between strangers			
Was alcohol involved			
Was there a weapon involved			
Type of weapon 1) Gun 2) Knife 3) Other: _____			
Were drugs involved			
Reported to police			
Needed to go to hospital			

6.11) In MOST cases of violence in this neighbourhood the person/people COMMITING the violence are: a) Drunk

b) High on marijuana
c) High on tik/mandrax/other hard drug
d) Drunk and high
e) Sober
f) Not sure

6.12) In MOST cases of violence in this neighbourhood the VICTIMS of violence are:

a) Drunk
b) High on marijuana
c) High on tik/mandrax/other hard drug
d) Drunk and high
e) Sober
f) Not sure

6.13) In MOST cases of violence in this neighbourhood the person/people COMMITING the violence are: a) Living in this neighbourhood
b) from outside the sub-area but in Khayelitsha

c) from outside Khayelitsha
d) from outside the neighbourhood, but in collaboration with people living in the neighbourhood

SECTION 7: LIQUOR POLICY AND ENFORCEMENT

The next section is about alcohol. We would like to know about alcohol use in your area.

7.1) How many people in this neighbourhood drink alcohol?

a) Almost everyone
b) About half the people here drink
c) Not many people drink

7.2) How many people in this neighbourhood drink too much alcohol?

a) Almost everyone drinks too much
b) About half the people here drink too much
c) Not many people drink too much

7.3) How many drinkers in this neighbourhood drink alcohol until they become drunk?

a) Almost all drinkers here drink alcohol until they are drunk.
b) About half the drinkers drink alcohol until they are drunk.
c) The minority of drinkers here drink until they are drunk.

7.4) If you compare alcohol to other drugs, would you say…

a) Alcohol is the same as other drugs
b) Alcohol is a drug but it is less harmful
c) Alcohol isn't a drug but it is still harmful
d) Alcohol isn't like other drugs at all

7.5) How many people in this neighborhood use hard drugs like tik or mandrax? a) Almost everyone

b) About half the people here
c) The minority of people
d) No-one

7.6) From your house, how long would it take get to a place where one could purchase alcohol? (in minutes)

During a weekday	
Week evening	
Weekend day	
Weekend evening	
Don't know (tick)	
Refused (tick)	

7.7) Think about the closest liquor outlet to where you stay (or the most popular one that is closest to you) - What type of outlet is that?

a) Licensed bar/tavern
b) bottle store
c) shebeen
d) Take-away
e) other (specify)? _____
f) Don't know
g) Refused

7.8) What time does that place open? __ __ :__ __ am/pm

anytime	refused

7.9) What time does that place close? __ __ :__ __ am/pm

anytime	refused

7.10) Do you think shebeens/unlicensed alcohol outlets have more violence than licensed taverns/bars?

Yes ☐ No ☐
Not sure

7.11) Have you or anyone in your household, in the past year (c\tick all that are applicable):

1) Felt threatened because of people drinking at a tavern or shebeen near to your dwelling	
2) been concerned by noise or activities from a shebeen or tavern near to you	
3) called the police because of an alcohol-related disturbance? (e.g. noisy shebeen or drunk people on the streets)	
4) had someone urinated or vomited on or near your property	

7.12) Would you support:

	yes	no	Don't mind
a purchase age of 21 years (i.e. people have to be 21 years or older to be able to buy alcohol)			
restrictions on numbers of alcohol outlets in your community			
earlier closing times for bars/taverns/shebeens and nightclubs			
earlier closing times for buying alcohol from bottleshops and supermarkets			

an increase in the price of alcohol			
more random breath testing (stopping drivers to check their alcohol levels)			
an increase in alcohol taxes to pay for alcohol treatment			
an increase in alcohol taxes to lower other taxes (such as income taxes)			
an increase in alcohol taxes to pay for any government purpose (such as hospitals)			
taxing drinkers to pay for the cost of alcohol related harm to society			
More police raids of shebeens			
restrictions on alcohol marketing / advertising on TV and radio			
restrictions on alcohol marketing / advertising on billboards			
restrictions on alcohol marketing / advertising through sponsorship (e.g. sponsoring sports)			
restrictions on alcohol promotions. E.g. happy hours, free samples			

7.13) In the last year have you noticed?

More police raids on shebeens	
Shebeens closing earlier	
Fewer shebeens/ more shebeens closed down permanently	
Improved facilities at shebeens (e.g. more space for customers, provide toilets, kitchens with food)	
Better security and management of shebeens	
More activities by the liquor industry to make them supportive of community events	
Any other important changes - specify	

SECTION 8. ACTIVE ORGANISATIONS AND PROGRAMMES

8.1. Which agency has been most important in improving living conditions in this neighbourhood (for example: national provincial, local government department or programme, NGO, community organisation,etc) – or N/A)? _____

8.2. Which agency has been most important in developing community cohesion in your neighbourhood (for example: national provincial, local government department, NGO, community organisation,etc)?

_____

8.3.) Are you familiar with any of the following interventions having taken place in your neighbourhood? (tick all options that they know about)

Reduced closing times for outlets in collaboration with neighbourhood watches (NHWs) and community policing forums (CPFs)	

The development of a high street or clustering of liquor outlets by local authorities	
A "safe shebeen" pilot project	
Initiatives to diversify trade and retailing in your area	
Measures to improve access to police and justice services	
Measures to improve access to social welfare services	
Urban Upgrading	
Media campaign about alcohol or violence	
Treatment programs (inpatient or outpatient) for alcoholics and substance abuse	
Provision of recreational activities	
Provision of mental health programs	
Skills development programs	
Employment programs	
Training of liquor outlet staff in the responsible serving of alcohol	
Services for victims of violence	
Provision of transport alternatives for drunk drivers and walkers	
School based alcohol and substance abuse education program	
Early childhood development programmes	
Family or parenting programmes	
Programs trying to challenge gender norms	
Youth development programmes	

Thank you for participating in our survey.

Record END TIME: (_ _:_ _)

Appendix B: Questionnaire for young adults

(For adult born closest to June 1990 in the household)

Fieldworker instructions:

- Confirm birthdate with interviewee. **DOB:** YYYY/MM/DD
- Begin survey only after the study has been explained and the consent form has been signed.
- Record START TIME: (_ _:_ _)
- If possible, request that the interview be conducted with privacy (alone with the young adult)
- Map Reference Number: _____ Fieldworker Name: _____ Who is present for the interview?

alone	Spouse/girlfriend/boyfriend	Older family members	Younger family members/children	Other

SECTION 1. Education and Employment

Introduction: first we will ask you a few questions about your current employment & educational activities.

1.1) Are you currently enrolled in higher education or skills development programs/courses?

Yes	No

1.2) If yes, which of the following:

University	False bay college	Other technical training	Other (specify)_____

1.3) IF not, why not?

Chose not to	Can't afford it	Did not meet entrance requirements (e.g. matric exemption/ certain grades)	Other

1.4) Are you currently employed?

Yes	No

SECTION 2: URBAN UPGRADING (SOCIAL)

This section will talk about your experience of the neighbourhood you live in and how happy you are in your current dwelling.

2.1) Emotional health

INTERVIEWER READ OUT: We would like to know how your general well-being has been over the past week. I am going to read a list of some of the ways you may have felt or behaved during the last week. Please indicate how often you have felt this way during the past week. Interviewer: Circle one number on each line

During the past week...	Rarely or none of the time (less than 1 day)	Some or little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
2.1.1) I was happy (Bendonwabile)	1	2	3	4
2.1.2) I felt hopeful about the future (Bendiziva ndinethemba malunga nekamva)	1	2	3	4
2.1.3) I was bothered by things that usually don't bother me (Bendihlutshwa zizinto ezingaqhelanga kundihlupha)	1	2	3	4
2.1.4) I had trouble keeping my mind on what I was doing (Bendinengxaki yokuzinzis' ingqondo kwinto endiyenzayo)	1	2	3	4
2.1.5) I felt depressed (Bendiziva ndixinzelelo lwengqondo)	1	2	3	4
2.1.6) I felt that everything I did was an effort (ibezinzame)	1	2	3	4
2.1.7) I felt fearful (Bendisoyika)	1	2	3	4
2.1.8) My sleep was restless (Bebungehli ubuthongo)	1	2	3	4
2.1.9) I felt lonely (Bendiziva ndililolo)	1	2	3	4
2.1.10) I could not "get going" (Bendingakwazi ukuqhubeka nobomi)	1	2	3	4

2.2. Well-being and social cohesion

INTERVIEWER READ OUT: Next, we want to ask you some questions about your relationship with your neighbours and the social interactions that you have with those around you.

2.2.1. Think about the area (village or suburb) in which you live. How strong is your preference to continue living in this area? **Read out options**	Strong preference to stay	1
	Moderate preference to stay	2
	Unsure (no strong preference to stay or leave)	3
	Moderate preference to leave	4
	Strong preference to leave	5
2.2.2. How would you classify your household in terms of income, compared with other households in your village/suburb? **Read out options**	Much above average income	1
	Above average income	2
	Average income	3
	Below average income	4
	Much below average income	2
	Don't know	9

2.3. In the last 12 months have you:

	yes	**no**	**Don't know**

2.3.1) Attended a public meeting or rally			
2.3.2) Taken part in a public demonstration or protest			
2.3.3) Signed a petition			
2.3.4) Completed a questionnaire about local services or problems in local area			
2.3.5) Been actively involved in a group set up to discuss local services or problems in local area			
2.3.6) Been actively involved in a social/religious/hobby group such as book club or church			
2.3.7) Been actively involved in a voluntary security-related organisation such as a neighbourhood watch or community policing forum			
2.3.8) Been actively involved in another voluntary organization			
2.3.9) Contacted a politician or public official with an enquiry other than routine contact arising from use of public services			

2.4.1) In the last year have you attended a community meeting to discuss urban upgrading, safety, facilities, services or any other problems or issues that impact on quality of life in your neighbourhood?

yes	no	Don't know

2.4.2.) If yes, how many times did you attend such a meeting in the last year?

_____

2.4.3) Did you find this meeting useful?

yes	no	Don't know

SECTION 3: EXPERIENCE OF VIOLENCE

The next section is about your experiences and opinions about violence. This may be difficult to talk about but it is important for us to know about the crime that is most affecting you in your area in order to see if things are improving. If you do not feel comfortable answering any question we can skip that question.

3.1) Most common crimes

Studies have suggested that the following are the most common crimes around Cape Town.

Which of the crimes below is most common in your area? [Rate 1 as most common, 2 as second most common and 3 as third most common]. If you need to, you can add another type of crime to this list.

3.2) Try think back over the past 12 months – i.e. between today and April/May 2012. Which if any of these crimes has affected you personally **in the past 12 months**?

Priority crime/violence	3.1) Most common crimes	Your own experience of crime over the past one year	3.2) Yes or No	Approx.month if recalled
Robbery/ Home invasion		Property taken from you personally with actual or threatened violence		
Petty theft / Housebreaking		Actual forced entry into your home with intention to steal		

Murder		Has anyone close to you been murdered?		
Assault with a weapon		You have been **injured** with a weapon on purpose?		
Assault without a weapon		You have been otherwise injured on purpose?		
Domestic violence/abuse		Have you experienced any form of violence or abuse within your household?		
Rape		Have you experienced being raped or were really frightened you could be raped?		
Car hijacking		Have you been hijacked or in a car that was hijacked?		
Arson		Has any property of yours been destroyed by fire started on purpose?		
Crimes targeting minority groups		Have you been the victim of or witnessed someone else being the victim of violence because of your nationality, gender, race, or sexual preferences?		
Drug trafficking		Have you been involved in crossfire or drug related violence?		
Community justice – i.e. vigilantism		Have you witnessed or been the target of threatened or actual community justice/mob violence?		
OTHER:_____				

3.4) Apart from the incidents just covered, have you over the past five years been personally threatened by someone in a way that really frightened you either at home or elsewhere, such as in a pub, in the street, at school, on public transport, on the beach, or at your workplace?

yes	no

3.4.1) If so, who threatened you?

1	2	3	4	5	6
Family member	friend	Intimate partner	acquaintance	stranger	NA

SECTION 4: ALCOHOL

We will now be asking some questions about your alcohol consumption and your opinions about alcohol. These answers will be strictly confidential and the other people in your household will also not be able to see them. There are no right or wrong answers. If there are any questions that you feel that you do not wish to answer, you are free to move on to the next question.

Consumption

4.1) Approximately how often do you usually drink alcohol?

Everyday	
Almost Everyday	
Weekly	
Monthly	
Less than monthly	
Never	
Refused	
Don't know [Check if at least 1 time in last 6 months]	

4.2) On what occasions do you drink alcohol? (tick all that apply)

every day	
On weekends	
Big events such as birthdays, weddings and funerals	
Over Christmas and New Year	

4.3) Where do you normally drink alcohol (tick one)?

Home	
Friends' homes	
Shebeen	
Tavern	
Street bash	
Other	

4.4) What is it that you normally drink (you can choose more than one)?

Beer	
Cider	
Home brewed beer (umqombothi)	
Wine	
Spirits (neat)/ shooters	
Mixed cocktail e.g. brandy and coke	
Liqueurs	
Fortified wines (e.g. Sherry, port)	
Ready-To-Drinks (RTDs) (e.g. smirnoff ice, bacardi breezer)	
Other (specify):	
No alcohol	
DON'T READ – Refused	
DON'T READ – Don't know	

4.5) How many drinks would you drink during an average drinking session (counted as any one or combination of the below drinks)?

	360ml of **regular beer (1 quarts = 2 of these)**	250ml of **malt liquor (1 quarts = 3 of these)**	150ml of **table wine (1 bottle = 5 of these)**	100ml of **fortified wine** (e.g. sherry or port. 1 750ml bottle of old brown sherry = 8 of these)	60-90ml of **cordial, liqueur, or aperitif**	45ml of **brandy** (a single jigger or shot)	45ml shot of **80-proof spirits** ("hard liquor") (a bottle of whiskey is usually 750ml or 17 of these)
							
	about 5% alcohol	about 7% alcohol	about 12% alcohol	about 17% alcohol	about 24% alcohol	about 40% alcohol	about 40% alcohol
Number drunk:	a)	b)	c)	d)	e)	f)	g)

4.6) Do you usually eat when you drink alcohol?

4.6) How much would you spend on an average drinking session (in rands)?

_____

Now we are going to ask you some questions about how you've obtained alcohol in the last three months.

4.7.1) In the past three months, when was the latest time at night that you bought your last drink? (_ _:_ _) 4.7.2) In the past three months, when was the earliest time in the morning that you bought alcohol? (_ _:_ _)

4.7.3) Have you bought alcohol on a Sunday?

Yes	No

4.7.4) If yes to 4.7.3), then where did you buy alcohol on a Sunday?

Supermarket	Shebeen	Tavern/bar	Spaza/take away	Other

4.8) In general, how much time would it take for you to travel to the usual place where you drink alcohol (in minutes)?

_____

4.9) Which neighbourhood is this place in? (Can use list in appendix to aid memory)

1	2	3	4	5	6	7

DRIFTSANDS	HARARE	ILITHA PARK	KHAYA	KUYASA	MAKHAZA	MAKAYA
8	9	10	11	12		
MONWABISI PARK	SITE B	SITE C	TOWN 2	Outside Khayelitsha		

4.10) How would you usually travel there?

a) walk
b) taxi
c) train
d) bus
e) car (as driver)
f) car (as passenger)
g) cycle
h) other
i) N/A

4.11) Approximately how long would it usually take to get there? (in minutes, the way you usually travel there)

_____

Safety and police involvement

4.12a) How many times in the last 6 months have you yourself had any involvement with Police

0	1	2	3	4	5+

4.12b) How many times in the last 6 months have you yourself had any involvement with Police because of your drinking?

0	1	2	3	4	5+

4.13) How many times in the last 6 months have you yourself had any involvement with CPF/neighbourhood watch/security guards because of your drinking?

0	1	2	3	4	5+

4.14) How many times in the last 6 months have you observed others having involvement with police or other security personnel/voluntary groups because of their drinking?

0	1	2	3	4	5+

4.15) How many times in the last 6 months have you felt unsafe while drinking?

0	1	2	3	4	5+

4.16) How many times in the last 6 months have you had your personal safety threatened while drinking?

0	1	2	3	4	5+

4.17) How many times in the last 6 months have you seen someone else's personal safety threatened while they were drinking?

0	1	2	3	4	5+

4.18) Do you carry a weapon for self-defense?	yes	no	Don't know
4.19) If so, what type of weapon?	a) Gun	b) knife	c) other
4.20) If so, what times of day?	a) all the time	b) some of the time	c) only at night

Dependence and treatment

The next four questions are about your personal drinking habits. Again, there are no right or wrong answers.

	Never	Less than monthly	monthly	weekly	Almost daily
4.21) In the last 6 months, have you had a feeling of guilt or remorse after drinking?					
4.22) In the last 6 months, has a friend or family member told you about things you said or did while you were drinking that you could not remember?					
4.23) In the last 6 months, have you failed to do what was normally expected of you because of drinking?					
4.24) In the last 6 months, have you taken a drink when you first get up in the morning?					

SECTION 5: POLICY SUPPORT

5.1) Would you support:

		yes	**no**	**Don't mind**
1	a purchase age of 21 years (i.e. people have to be 21 years or older to be able to buy alcohol)			
2	restrictions on numbers of alcohol outlets in your community			
3	earlier closing times for bars/taverns/shebeens and nightclubs			
4	earlier closing times for buying alcohol from bottleshops and supermarkets			
5	an increase in the price of alcohol			
6	more random breath testing (stopping drivers to check their alcohol levels)			
7	an increase in alcohol taxes to pay for alcohol treatment			
8	an increase in alcohol taxes to lower other taxes (such as income taxes)			
9	an increase in alcohol taxes to pay for any government purpose (such as hospitals)			
10	taxing drinkers to pay for the cost of alcohol related harm to society			
11	More police raids of shebeens			
12	restrictions on alcohol marketing / advertising on TV and radio			
13	restrictions on alcohol marketing / advertising on billboards			
14	restrictions on alcohol marketing / advertising through sponsorship (e.g. sponsoring sports)			
15	restrictions on alcohol promotions. E.g. happy hours, free samples			

5.2) In the last year have you noticed?

1	More police raids on shebeens	

2	Shebeens closing earlier	
3	Fewer shebeens/ more shebeens closed down permanently	
4	Improved facilities at shebeens (e.g. more space for customers, provide toilets, kitchens with food)	
5	Better security and management of shebeens	
6	More activities by the liquor industry to make them supportive of community events	
7	Any other important changes - specify	

Thank you for participating in our survey.

Record END TIME: (_ _:_ _)

APPENDIX C: INFORMED CONSENT FORM

TO BE COMPLETED BY DATA COLLECTOR IN CONSULTATION WITH RESPONDENT THAT IS OVER THE AGE OF EIGHTEEN YEARS

You are being invited to complete a questionnaire as part of two research studies titled "Evaluating the effectiveness of urban upgrading for violence prevention in selected low income communities in the Western Cape Province, South Africa**" and**"Evaluating the effectiveness of the Western Cape Liquor Act in Khayelitsha**".**

Who is conducting the research?

The University of Cape Town is collaborating with the Violence Prevention through Urban Upgrading, the Western Cape Department of Health and the Medical Research Council to conduct this study.

The Principal Investigator is Dr Richard Matzopoulos 021 4066765 / richard.matzopoulos@uct.ac.za

What is the study about?

- The first study aims to assess what effect the Western Cape Liquor Act and other interventions have had on alcohol access, shebeen closing times, drinking behavior and alcohol harms in Khayelitsha. The second is looking at the effect of urban upgrading initiatives on violence.
- The researchers are already collecting information on where alcohol-related injuries are occurring, and what the effects of urban upgrading projects are. However, it is also important to know about the attitude of community members towards alcohol issues and development, and find out more about drinking behaviors, alcohol access and community safety.
- The researchers plan to use this information to reduce alcohol harms, inform future urban upgrading projects and create a safer environment in Khayelitsha, Nyanga and Gugulethu.

What will be required of you if you agree to participate?

- You will need to understand and sign this consent form.
- You may look at the questionnaire prior to deciding if you would like to take part.
- You will be asked a few questions by the data collector about the availability of alcohol in your community, and about your own drinking behavior and your experience of other drinkers.
- This should take about 40 minutes to complete.
- Some of the questions may be of a sensitive nature.
- Your participation is entirely voluntary and you do not have to provide any information that you don't want to share (you may withdraw your answers, refuse to participate or leave out details if you wish). You may withdraw at any time.

Are there risks involved in taking part in this study?

- The researchers do not intend to cause you any mental stress or discomfort. We will not be asking for details that will identity you or others individually. We will not be performing tests of any kind, and will only be asking you questions, which you do not have to answer.
- Your identity will not be revealed at any point during or after the study has been conducted or when the study is published.
- This consent form will be kept separately from your questionnaire and filed in a locked cabinet at UCT. All information collected in the questionnaire will be stored in a password protected database. The questionnaires will be destroyed after the study.
- Only the researchers will have access to these questionnaires and the data collected.

INFORMED CONSENT:

I voluntarily consent to participate in this study and acknowledge that:

- I have been informed about the study; the nature, conduct, benefits and risks of study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, and my responses will be anonymously processed into a study report. In view of the requirements of research, I agree that the data collected during this study can be processed by the researcher.
- I may, at any stage, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- If I have questions about my participation in this study, I know that I can contact the University of Cape Town Faculty of Health Sciences Human Research Ethics committee , 021 406 6492 and the Principal investigator Dr Richard Matzopoulos at richard.matzopoulos@uct.ac.za or on 021 4066765 at any time.

_____

Signature or thumbprint of participant

_____ _____

Participant's name **Date**

_____ _____

Data Collector's name **Data Collector's Signature**

Appendix D: Letter of Approval from Research Ethics

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room E52-24 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6338 • Facsimile [021] 406 6411
Email: sumayah.ariefdien@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

26 November 2015

HREC REF: 552/2015

Dr R Matzopoulos
Public Health Family Medicine
Falmouth Building

Dr Matzopoulos

PROJECT TITLE: ALCOHOL POLICY AND REGULATION: PUBLIC OPINION AMONGST YOUNG ADULTS IN KHAYELITSHA, SOUTH AFRICA- LINKED TO 476/2012 (Masters candidate- Britany Ferrell)

Thank you for your response letter, addressing the issues raised by the Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30th November 2016.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our

We acknowledge that the following student:-Britany Ferrell is also involved in this project.

Please quote the HREC reference no in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938
This serves to confirm that the University of Cape Town Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research

Appendix E: Instruction for Authors

Journal of Studies of Alcohol and Drugs

The average time from acceptance to online publication is 3.5 months. The average time from submission to acceptance is 4 months.

EndNote Users: Authors who use EndNote can download JSAD's reference style directly from EndNote's website via this link: **http://endnote.com/styles/J%20Studies%20Alcohol%20Drugs.ens**

The Journal of Studies on Alcohol and Drugs (JSAD), founded in 1940, publishes peer-reviewed manuscripts dealing with diverse aspects of alcohol and other substances of abuse. JSAD is a multidisciplinary journal, and the range of materials includes biological, medical, epidemiological, social, psychological, legal, and other aspects of alcohol and other drug use, abuse, and dependence. JSAD will publish the following types of manuscripts:

Review and Meta-Analysis Articles: JSAD welcomes submission of review articles, particularly those that represent a new synthesis of information. These articles should be no more than 4,500 words (from the Introduction through the Discussion, excluding the Title Page, Abstract, Acknowledgments, References, Tables, Figure Captions, and Figures).

Original Studies: These are reports of original investigations that convey the discovery of new knowledge and whose main emphasis is not the development of methods. The recommended length for these reports is no more than 4,000 words (from the Introduction through the Discussion, excluding the Title Page, Abstract, Acknowledgments, References, Tables, Figure Captions, and Figures).

Brief Reports: These are brief communications that describe new methods, techniques, or apparatus of general interest to the field of alcohol and other drug studies or that present the results of experiments that can be concisely reported with up to one table or figure. These papers are limited in length to 2,500 words (from the Introduction through the Discussion, excluding the Title Page, Abstract, Acknowledgments, References, Tables, Figure Captions, and Figures).

Correspondence: The Editor encourages readers' letters, whether they respond to articles or editorial comments published in JSAD, concern important issues of general interest to the field of alcohol and other drug studies, or describe upcoming meetings and events of interest to the JSAD's readership. Authors will be given the opportunity to reply to accepted letters critical of their work.

PAGE CHARGES

JSAD does not assess page charges on its contributors except for the use of color in figures.

MANUSCRIPT SUBMISSION

Authors should submit articles **online**. Most word processing languages are acceptable, but MS WORD is preferred.

Each manuscript must be accompanied by a cover letter indicating whether the paper is submitted as a review, an original study, a brief report, or a theoretical article. The cover letter should also contain (a) the name, address, email address, and telephone/fax numbers of the corresponding author; (b) a statement that the paper contains original material, not submitted, in press, or published elsewhere in any form; (c) a statement that each author has contributed significantly to the work and agrees to the

submission; (d) a note describing any conflict of interest regarding the paper or a statement that no conflict exists; (e) an explanation of the contribution of the present manuscript to the literature; (f) if desired, suggestions for possible reviewers; and finally (g) **the signatures of all authors.** If all authors cannot sign the same letter, each author can submit a separate letter with his or her signature on it. Electronic signatures (i.e. scanned images of signatures that are imported into the word processing document) are acceptable. Cover pages that are not included with the electronic submission may be faxed to (860) 679-5451.

JSAD has adopted the guidelines of the International Committee of Medical Journal Editors regarding authorship. These state that "All persons designated as authors should qualify for authorship. The order of authorship should be a joint decision of the co-authors. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship credit should be based only on substantial contributions to (a) conception and design, or analysis and interpretation of data; and to (b) drafting the article or revising it critically for important intellectual content; and on (c) final approval of the version to be published. Conditions (a), (b), and (c) must all be met ... [The editor] may require authors to justify the assignment of authorship" (Uniform Requirements for Manuscripts Submitted to Biomedical Journals, 1994).

If the manuscript is accepted for publication, it will be necessary for JSAD to receive a written Assignment of Copyright from all authors. Forms for the Assignment of Copyright will be mailed from the Editorial Office at Rutgers University. When a manuscript is accepted for publication in JSAD, it is understood that the authors are agreeable to other competent scientists having access to sufficient data to verify the study's results.

MANUSCRIPT FORMAT AND ORGANIZATION

Each manuscript must be in English, in 12-point Times New Roman font, with everything double-spaced (including references) and 1" margins. The following sections should be included in the order listed: (a) Title Page, (b) Abstract, (c) Introduction, (d) Method, (e) Results, (f) Discussion, (g) Acknowledgments, (h) References, (i) Tables, (j) Captions for Figures, and (k) Figures.

Please note: JSAD specific policies regarding use of the terms **abuse** and **binge**. See these links for more information.

Title Page: This should contain the full manuscript title (which should concisely convey the article's major contents); the names, academic degrees, and affiliations, with complete addresses, of all authors; and the institution(s) of origin. Indications of grant support should appear in the bottom of this page and should include the name of the granting agency and the grant number. This page should also include the name, telephone and fax numbers, and email and street addresses of the corresponding author to whom galley proofs should be sent. The number of tables and the number of figures in the manuscript should be indicated in the top left-hand corner of the title page.

Abstract Page: Abstracts should be 250 or fewer words and must include the following information under the these four headings: (a) **Objective:** the background and purpose of the study (in a complete, grammatical sentence); (b) **Method:** the study design, setting, participants (including manner of sample selection, number and gender of participants) and interventions; (c) **Results:** details of major findings; and (d) **Conclusions:** main inferences drawn from results and potential application of findings.

Introduction: This section, which should begin a new page, should acquaint the reader with the background of the study and should contain a clear statement of the goals of the investigation or the hypotheses that the study was designed to test.

Method: For all research containing human subjects, the first paragraph of the method section should provide detail about human subjects review and institutional review board approval. The methods should be described in sufficient detail to allow the reader to judge their accuracy, reproducibility, and reliability. New methods or procedures and modifications of previously published methods should be described in sufficient detail to permit replication of the study. Commonly used methods require only a citation of the original source.

Results: The experimental data should be described succinctly but completely in text without redundancy between figures and tables or discrepancy between text and tables. Graphic and tabular displays are preferred to discursive narrative. Sufficient data must be provided to allow readers to judge the variability and reliability of the results. Average values must be accompanied by standard errors or standard deviations (e.g., $M = 21.5$, $SD = 0.95$). Statistical analysis of the data should be explained early so that the interested but nonexpert reader can interpret the findings. The results of statistical tests should be accompanied by degrees of freedom, for example, $t(27) = 2.12$, $p = .05$, $F(3, 27) = 6.51$, $p = .0$. **For the presentation of statistics in the text, use American Psychological Association (APA) style** (Publication Manual of the APA, Sixth Edition, Second Printing). For further guidance on the appropriate presentation of results, authors should consult Carpenter, J. A. (1996) Between acceptance and publication. A sampling of some common problems.*Journal of Studies on Alcohol and Drugs, 57*, 341–343.

Discussion: The discussion of the experimental findings and their interpretation should be brief and focused. Alternative interpretations and/or limitations in the procedures should be explained. Avoid repetition of material in the introduction and detailed repetition of the experimental findings. Speculative discussion should be limited and directly relevant to the results obtained.

Acknowledgments: Acknowledgments made to individuals should be as brief as possible.

In-text citations: JSAD uses its own journal style for in-text citations. It is similar to APA style, but different in one important aspect: JSAD uses "et al." after the first author's surname on the first and all subsequent in-text citations for any reference with three or more authors. Authors should use the following format on the first appearance of a citation within the text and for all subsequent appearances.

Authors' names in parentheses (first and all subsequent citations):

One author: . . . (Washington, 1976) . . .

Two authors: . . . (Washington & Gates, 1987) . . .

Three or more authors: . . . (Jefferson et al., 1998) . . .

Authors' names in the text (first and all subsequent citations):

One authors: ... as surveyed by Washington (1976).

Two authors: Washington and Gates (1987) discovered . . .

Three or more authors: Jefferson et al. (1998) wrote that . . .

Multiple works by the same first author: If two or more references in the list have the same first author, have three or more authors, and were published in the same year (e.g., an article by Arthur, Cleveland, and Harrison published in 1988 and a second article published by Arthur, McKinley, and Hayes also in 1988), the first article would become "1988a" and the second would become "1988b" in the reference list. On the first and all subsequent in-text citations, Arthur, Cleveland, and Harrison should be cited "Arthur et al., 1988a," and Arthur, McKinley, and Hayes should be cited "Arthur et al., 1988b."

Reference list: JSAD publishes all reference lists in APA style (Publication Manual of the APA, Sixth Edition, Second Printing). In the following, we present a brief sample of a reference list entry for a journal article and a book chapter. Please consult the Publication Manual of the APA for additional details about styling reference lists. More information and tutorials are also available at: **www.apastyle.org**.

EndNote Users: Authors who use EndNote can download JSAD's reference style directly from EndNote's website via this link:**http://endnote.com/styles/J%20Studies%20Alcohol%20Drugs.ens**

Journal Articles

Warner, L. A., White, H. R., & Johnson, V. (2007). Alcohol initiation experiences and family history of alcoholism as predictors of problem-drinking trajectories. *Journal of Studies on Alcohol and Drugs, 70*, 56–65.

Book Chapters

McCord, J. (1991). Identifying developmental paradigms leading to alcoholism. In D. J. Pittman & H. R. White (Eds.), *Society, culture, and drinking patterns reexamined* (pp. 480–491). New Brunswick, NJ: Alcohol Research Documentation, Inc.

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Standard abbreviations for the route of alcohol administration are as follows: IG, intragastric; IP, intraperitoneal; IV, intravenous; PO, orally.

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