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Understanding Alcohol Marketing and Youth Alcohol Consumption in Kampala, Uganda

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Abstract

Introduction: Alcohol consumption leads to a disproportionate number of deaths around the globe every given year. Most of the current research regarding alcohol consumption is conducted not only on the adult population, but among what could be considered affluent first-world counties in North America and Europe. This undermines two key populations, developing and under-resourced countries, and youth. Alcohol marketing is also a widely used tool to advance sales within countries, however its impact upon communities is also lacking research. This study seeks to not only advance research by studying youth in Kampala, Uganda, but to look at the relationship between drinking habits and alcohol marketing exposure among youth who live on the streets and in the slums.

Methods: The Kampala Youth Survey is a cross-sectional survey administered in 2014 to youth ages 12 to 18 years old, living in the slums of Kampala, Uganda (n=1,134). This study subset its survey population to look specifically at youth who had responded to questions regarding drinking habits and alcohol exposure (n=413). Descriptive statistics were calculated and logistic regression was conducted using SAS 9.3.

Results: Among the population of youth included within the study, 89.1% had a high exposure to alcohol marketing within their communities. Among participants, 84.18% had consumed alcohol within the past year and 94.49% had consumed alcohol within the last 30 days. The results of the logistic regression showed that there was a significant association between age and alcohol consumption within the last year and within the last 30 days in 2014. It also showed that certain locations were also a significant indicator of alcohol consumption. High alcohol marketing exposure was not seen as significant over low exposure, though high levels reported could indicate that future research will find it to be significant.

Conclusions: Exposure to alcohol marketing towards youth is a dangerous and impactful tool that can lead to alcohol consumption. While this study could not show that a higher exposure to alcohol marketing impacts drinking at a higher rate, the results suggest that alcohol marketing exposure in any form can impact drinking habits within youth. This realization is dangerous and gives pathways for not only future studies, but future regulations around alcohol marketing to protect youth not only in Kampala, but globally.

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Chapter I: Introduction

1.1 Background

The World Health Organization has reported that alcohol consumption contributes to at least 5.3% of all annually reported global deaths and approximately 5.1% of global disability adjusted life years, about 3 million each year (World Health Organization, 2018). However, despite this large percentage, and the wide range of health issues that alcohol consumption is linked to, there is a lack of research being done within the areas of the world most impacted by alcohol consumption.

Between the years of 1990 to 2017 a rise was seen in global current drinkers and global per-capita alcohol consumption among individuals above the age of 15 years. It is also estimated that by 2030 global per-capita alcohol consumption is expected to increase by 17% (Manthey et al., 2019). However, where globally the average per-capita alcohol consumption rate is around 6.5 liters, in Uganda the estimated per-capita consumption rate is at 26 liters (World Health Organization, 2018). Again, those data are representative of individuals surveyed above the age of 15 years and do not account for all youth alcohol consumption that may occur within the country.

Globally there are recommendations created by the alcohol industry regarding alcohol marketing, especially as it relates to vulnerable populations (International Alliance for Responsible Drinking, 2011). These principles, however, are often self-regulated and within lower-income countries not usually enforced. Within Uganda there are not currently enforcing regulations surrounding alcohol marketing (Alcohol Marketing Practices in Africa, 2011) leaving populations and age groups susceptible to false advertisement claims and fantasies. Limited

literature has been done in the field of alcohol marketing and its impact on alcohol consumption rates, especially within lower-income countries around the world.

Previous literature on alcohol consumption and alcohol marketing exposure has reported an association between the two (Jernigan et al., 2017; Sargent & Babor, 2020). However, research within this area of study is still relatively new, or conducted within higher-income areas such as North America and European countries. With that in mind, the purpose of this work is to further expand the current literature on alcohol marketing exposure of youth and the corresponding alcohol consumption within that population.

1.2 Research Questions

Question 1: What is the association between alcohol marketing exposure and prevalence of alcohol consumption among youth who have reported drinking?

Question 2: Does alcohol marketing exposure vary by location?

1.3 Purpose of Current Study

While research has been conducted on the impact of alcohol marketing exposure on the drinking habits of adults, little research has been done surrounding youth, especially in the context of sub-Saharan African countries. In fact, most of the studies conducted have been in high-income countries where the level of alcohol marketing does not compare to how other areas of the world are exposed (Anderson et al., 2009; Gordon et al., 2010). This current study explores the effect of alcohol marketing on the youth living in the slums of Uganda and how it impacts their alcohol consumption habits within the past year and within the past month. This study builds upon the work done by Swahn and colleagues (2014) who analyzed one of the only population-based investigations of its size utilizing street youth in urban/Kampala, Uganda. Her

work has proven to be an exemplary model and tool used by countless others seeking to study the health of populations often under-reported. The main factors of this were the level of exposure to commercial alcohol marketing that youth received and the locations that were recorded (List names of communities here once received). The purpose of this current study was to (1) to determine the overall impact of alcohol marketing on the youth living in the slums and on the streets of urban Uganda, (2) determine if location plays a factor in alcohol consumption habits of youth, and (3) investigate any differences reported between monthly and yearly self-reported alcohol consumption.

Chapter II: Review of the Literature

2.1 Alcohol Usage

While there is a respectable amount of literature on alcohol consumption, alcohol abuse, and alcohol related illness in high-income countries, far less examples of such studies exist on the rate of consumption or specifically alcohol consumption related interventions in certain settings of low-income countries, especially as it relates to Sub-Saharan Africa. Further still, even less research focuses on youth within these populations who live on the streets or in slums (Francis et al., 2020). Well-known organizations, such as the World Health Organization and United Nations, maintain fact sheets that cover general statistics regarding the drinking habits of countries, however only so much can be surmised through studying these fact sheets. With the largest portion of the Ugandan population being youths between the ages of 15 to 25 (United Nations Office of the Special Advisor on Africa, 2015) alcohol dependence, marketing and exposure not only affects the country at large, but specifically targets a burgeoning generation that grows everyday more vulnerable to an unrestricted advertising system and unreliable economic opportunities that can perpetuate alcohol consumption habits.

Globally it has been estimated that between 1990 and 2017, per-capita consumption of alcohol has increased from 5.9L to 6.5L; this amount is expected to grow by 17% by 2030 (Manthey et al., 2019). Likewise, it is estimated that there are currently around 2.3 billion current drinkers in the world above the age of 15 (World Health Organization, 2018).

Alcohol is typically divided into three overarching categories: beer, wine, and liquor. Within these three types of alcohol there are also wide varieties, styles, flavors, and percentages. However, for the general population there is the idea that only beer, wine, and

liquor exist. This is not the case. In fact, there is also "unrecorded alcohol" which usually consists of alcohol not accounted for in official statistics and represents around 25% of global alcohol consumption (Probst et al., 2019). Unrecorded alcohol is often produced and distributed outside the formal alcohol industry's control. This undocumented substance can be home-brewed using available resources, produced for commercial use without reporting, smuggled across borders, or not intended for human consumption (International Alliance for Responsible Drinking 2011). The home-brewed type of alcohol is considered "other" and can be fermented beverages made of bananas, sorghum, millet, corn, or other fruits and grains. (Rhem et al., 2014; Makhubele, 2013, Probst et al., 2018). This "other" type of alcohol represents 9.3% of alcohol consumption globally, but within the African region, it represents 65.1% of all alcohol consumed (World Health Organization, 2018).

In Uganda alone, the average rate of consumption currently rests around 26.0 liters of alcohol per person between both male and female citizens the age of 15 years of age and older, with males consuming around 32.7 liters and females consuming 12.5 liters. However, one of the most striking things about alcohol consumption in Uganda is that while the region already has a higher percentage of "other" alcohol as primary consumption, around 86% of all alcohol consumed in the country of Uganda is considered "other" (World Health Organization, 2018).

2.2 Alcohol Consumption Motives and Subsequent Health Issues

The consumption of alcohol has been seen to be driven by two main motives: people drink as a mechanism to cope, or individuals consume alcohol because of social standards and influences. (Abbey et al., 1993).

When individuals usually focus on drinking to cope it has been seen that coping focused on stress that included ways to escape from problems, manage current situations, or to regulate unpleasant emotions (Abbey et al., 1993; Herberman et al., 2016; Tartaglia and Bergana, 2020). Research has found that there were three common impulses that participants noted when choosing alcohol as a coping mechanism; these impulses were to cheer themselves up, to forget what was bothering them for that moment, and/or to handle the problems they felt were inflicting stress (Abbey et al., 1993). Alcohol consumption thus becomes a means of escape.

The other main motive found for alcohol use focused on the peer and social influence aspect of drinking. This incentive is more prevalent with infrequent drinkers but can lead to abusive and chronic alcohol use as well (Makela & Maunu, 2016). This form of drinking seems to be positive reinforcement from peers and desired acceptance to a group due to the consumption of alcohol. Social drinking includes alcohol use for celebratory occasions, relaxing with peers, and convivial use (Sudhinaraset et al., 2016). It can be seen that there are several common items attributed to those who were identify as social drinkers including: drinking to be social, drinking to enhance their enjoyment and social situation, drinking because others are drinking, and drinking in order to celebrate.

Both motives of alcohol use, whether coping or social, lend to the possibility of chronic or abusive alcohol use and alcohol related illnesses, especially when these are begun at an adolescent age.

These consequences are only exacerbated by income-inequality issues, as well as negative social reinforcement on the part of alcohol advertising companies in the region. As a

whole, the total number of years of life lost globally in relation to alcohol use totals disability-adjusted life years (DALY) at 5.1%. Alcohol consumption is also a causal factor that directly links to 5.3% of all global deaths (which comes out equal to about 3 million deaths yearly) (WHO Global status report on alcohol and health, 2018). This statistic is an increase from 2000 when it was estimated that only 3.2% of deaths worldwide could be attributed to alcohol (Rehm et al., 2003). Based on alcohol-attributable years of life lost, Uganda received a score of 5, indicating the highest amount of loss due to alcohol-related consumption (World Health Organization, 2018). In each of these cases, alcohol was used, and in most of them, it was consumed by youths 15 years of age or older.

2.3 Alcohol Marketing and Regulations

The concept of alcohol marketing is simple when broken down to its core: find the most effective ways to promote alcoholic products and then sell as much of those specific products as possible. Advertising/ marketing is a system that panders towards individuals' longings to escape their current situations if only for a short time. There are international regulations regarding alcohol advertising which were created by the main industries (beer, wine, and liquor). These regulations are listed by the International Alliance for Responsible Drinking (IARD), and are divided into some specific codes that all industries and companies are expected to follow for the health and well-being of those they advertise towards. These guiding principles break alcohol marketing codes into five main areas of interest: responsible marketing communications, responsible consumption, health and safety aspects in marketing communications, minors, and the effects of alcohol. They were also endorsed by ten of the largest multinational alcohol producers (International Alliance for Responsible Drinking, 2011).

These principles use specific language regarding alcohol marketing as it relates to minors and youths. Companies have agreed that there should be no advertisements that utilize themes, games, music, or characters (including cartoons) that primarily appeal to minors. Likewise, advertisements are only supposed to be listed in media areas where 70% of the potential audience is of the legal drinking age (International Alliance for Responsible Drinking, 2011).

Currently in Uganda, there is no state monopoly on the production and sale of alcohol. There is also no regulation for the advertising of alcohol (Alcohol Marketing Practices in Africa, 2011). Alcohol advertising and marketing may appear in many forms such as complimentary products, banners, a heavily prevalent media presence, and promotional gatherings in which alcohol is discounted or simply given away. These marketing strategies not only encourage the consumption of alcoholic beverages but are also targeted towards groups under the legal drinking age of 18. With limited and unenforced rules and regulations regarding alcohol advertisement in the country, marketing companies are free to promote their product in a myriad of different ways. To compound the issue, the Ugandan government receives revenue from these advertisements.

With both public and private distilleries and breweries advertising in Uganda, the inclusion of alcohol-related adverts is rampant, with advertisements appearing in magazines and newspapers, commercials on Ugandan Television and public radio, outdoor advertising, in-store promotions, and product packaging. Publicity also appears within corporate social responsibility networks (Alcohol Marketing Practices in Africa, 2011). These advertisements are not in any way restricted by regulatory codes, and though the code of marketing practices are

considered equal internationally in both public and private breweries, distilleries and alcohol agencies, there is a visible difference in the marketing codes that are observable in the United States, versus those within Africa. For example, according to the World Health Organization, within the United States, alcoholic beverages may not be advertised within 500 feet of schools, playgrounds or places of worship, however-especially within Uganda-these same distinctions do not apply. In several recorded instances concerning East African Breweries, alcoholic beverage advertisements were found in front of child care centers and primary schools. As seen here, these regulatory codes do not protect young people from this type of exposure, with the majority of these cases coming into direct contact with youth under 15.

Previous research has shown that alcohol marketing has had a large impact on encouraging underage / youth alcohol consumption (Jernigan et al., 2017). As previously stated though, the majority of this research has been conducted within the contexts of higher-income countries (Jernigan, 2011; Center on Alcohol Marketing and Youth, 2010; Patil et al., 2014; Fielder et al., 2009; Anderson et al., 2009). It has been shown that there can be associations between exposure to alcohol related marketing and subsequent alcohol use within the previous month and up to 9 months. Even exposure in a previous year can have a lingering impact, as youths respond strongly to the process of alcohol advertising/marketing (Gordon et al., 2010; Morgenstern et al., 2014). However, in the context of lower-economic areas of the world and sub-Saharan countries the research is limited or focused on other health behaviors with alcohol consumption only being a single factor for the main study purpose such as sexual assault, adverse childhood experiences, suicide (Sangtani, 2016).

Chapter III: Manuscript

3.1 Introduction

In 2000 it was estimated that alcohol consumption directly caused 3.2% of global deaths annually; however, as of 2018, alcohol consumption is attributed towards 5.3% of all global deaths annually, or around three million deaths every year (Rehm et al., 2003; WHO Global status report on alcohol and health, 2018). Alcohol consumption has been shown to have a myriad of health issues both in the short- and long-term including issues with the brain, heart, liver, and can lead to numerous cancers (National Institute on Alcohol Abuse and Alcoholism, n.d.). These health issues can be perpetuated through alcohol consumption starting at an early age (Grant & Dawson, 1997; Vieira et al., 2007). Sadly though, research has focused its efforts on studying high-income countries who have the means and resources to better protect its populations rather than low-income countries who need a more well-rounded understanding of alcohol consumption within their nations so that they can better protect their citizens.

African countries, as a whole, not only have some of the youngest but also the most rapidly growing populations in the world, with the majority of the countries' populations being made up of 35.82% or more, of youth under the age of 14 (The World Bank, 2019). Uganda as a country exhibits both an extremely high population growth rate, as well as one of the youngest populations in the world. In fact, it is estimated that around 77% of the population of Uganda is below the age of 25 (Central Intelligence Agency, 2020; The World Bank, 2019a). With the current growth rate of Uganda sitting at 3% meaning that 1.2 million children are born each year in the country (The World Bank, 2019a), there is an exponential growth occurring in the younger sector of the population. An increasing amount of those youth are coming into contact

with alcohol-related advertisements and instances of consumption are on the rise due to a myriad of issues.

The International Labor Organization and the United Nations estimate that across the world 25% of the working age population are youth but at the same time, the average unemployment rate of young people is 13.1%. This unemployment statistic which comes in at three times higher than the global unemployment rate of adults (International Labor Organization, 2020; United Nations, 2016). Within Uganda it is listed that approximately 38.5% of youth ages 10-19 live within some of the most impoverished areas in the country and that at least 8.8 million aged 15-24 are currently unemployed (UNFPA, 2016). It is estimated that between 2030 and 2040 approximately one million individuals will reach what is considered to be working age within Uganda. This group breaks down to around 700,000 individuals reaching that age per year. However, it is reported that only 75,000 jobs are produced annually, leaving hundreds of thousands of youths under-employed or unemployed. These idle youth continue to inhabit urban slums (The World Bank, 2020a).

Additionally, according to The World Bank, the economy of Uganda has not only recently suffered due to the Covid-19 pandemic that has inflicted the world, but has also been affected by severe flooding and locust infestations. Due to these health and environmental factors there has been a widespread decline in the overall gross domestic product of Uganda. This decline, which has led to higher rates of job loss and an economy that may not have the capacity to recover as rapidly as is required. Furthermore, it is estimated that several million in the country could soon fall below the current poverty level (The World Bank, 2020a). This is a concerning realization as it not only impacts the immediate state of the country, but also the

development of the youth as it relates to their ability to fund their education and find affordable housing. Reliable employment in the future to be able to provide for themselves is also in jeopardy.

With the majority of the population in Uganda being youth / young adults between the ages of 15 to 25 (United Nations Office of the Special Advisor on Africa, 2015) being not only exposed to high levels of alcohol marketing (Alcohol Marketing Practices in Africa, 2011), but under the economic strain country wide that grows every year, there is an important need to understand how youth within an under-researched and under-severed area are being impacted so that they can best be protected and served in the future. This current study seeks to aid in the advancement of such research so that areas like Kampala, Uganda can be best represented in the future.

3.2 Methods

In March and April of 2014, a cross-sectional survey titled, "2014 Kampala Youth Survey" was administered among urban youth (n = 1134) living in the slums of Kampala, Uganda. The youth ranged in ages from 12 to 18. The survey methodology used has been well documented and described within previous literature (Culbreth et al., 2020; Swahn et al., 2019; Swahn et al., 2016; Swahn et al., 2017; Swahn et al., 2015). One of the main goals of the original 2014 Kampala Youth Survey was to better understand urban youth alcohol consumption, alcohol marketing exposure, along with high-risk behaviors such as risky sexual practices. The survey also sought to study HIV among the urban youth in Kampala.

A convenience sample (n = 1628) was approached during the data collection period of March to April of 2014. From the urban youth surveyed the participation rate was 92% as 131

of the youth declined participation. From the further 1497 surveys collected, a further 320 had to be removed due to technical malfunctions, leaving a final sample (n = 1134) completed by urban youth ages 12 to 18 years (44% boys, 56% girls). From this total sample, only youth who had completed questions on drinking within the last year, drinking within the last month, and alcohol marketing exposure were included in the final study, leaving a final sub-sample for this study of (n = 413).

The survey was administered with the use of social workers and peer educators from UYDEL who had previous experience working with youth and were trained with the study methodology. The survey was translated into Luganda, a local language in Uganda, and given or, if needed, read to the study participants. The Institutional Review Board (IRB) approvals were obtained from both Georgia State University and the Uganda National Council for Science and Technology prior to the start of this study for permission to conduct this study within Kampala, Uganda. Criteria for inclusion within the study required participants to be youth between the ages of 12 to 18 who were present on the day of the study and able to provide their own consent for participation. According to the Ugandan law, and the Uganda National Council for Science and Technology, you who are classified as being able to, "Cater for their own livelihood" are considered emancipated and do not need parental consent to participate within the proposed study.

The 2014 Kampala Youth Survey was developed mainly to measure the alcohol use, alcohol marketing, exposure to violence, violence victimization, risky sexual behaviors and habits, HIV status, mental health, and general overall well-being among youth living on the streets and in the slums of Kampala, Uganda. The questions were developed with the use of

previously validated instruments that have been used globally and in the United States

including: Kampala Youth Survey 2011 (Swahn et al., 2012; Swahn et al., 2016; Swahn et al.,

Swahn et al., 2014; Swahn et al., 2015), the Global School-based Student Health Survey (GSHS)

(World Health Organization, 2013), the Monitoring Alcohol Marketing Practices in Africa 2012

questionnaire (MAMPA) and the Alcohol Use Disorders Identification Test (AUDIT) (Conigrave,

Hall, & Saunders, 1995), a safer sex messages intervention questionnaire (Romer et al., 2009),

the CAGE (Cut-Down, Annoyed, Guilty, and Eye-Opener) questionnaire (National Institute on

Alcohol Abuse and Alcoholism, n.d.),the Acquired Immunodeficiency Syndrome (AIDS) Indicator

Survey (Ministry of Health Uganda & USAID, 2011), the Demographic Health Survey (USAID,

n.d.), and the United States based Youth Risk Behavior Survey (Eaton et al., 2012).

The primary outcome variable created for this paper, alcohol usage, was assessed using

two existing variables, one which addressed youth alcohol consumption within the last calendar

year, and the other addressing youth alcohol consumption within the previous month. Alcohol

consumption within the last year was assessed using the question, "Have you had a drink of

alcohol within the last year?" Youth could answer *yes or no*. It should also be noted that youth

could decline to answer at all. Alcohol consumption within the last month was assessed with

the question, "In the past month- on how many days did you drink alcohol?" Youth could

respond with, *0 days, 1-2 days, 3-5 days, or 6+ days.* With this question it was recorded into a

dichotomous response of *yes* or *no* to allow for direct comparison to the variable addressing

alcohol consumption within the last year.

The primary predictor variable, alcohol marketing exposure, was created using a composite score of several previously existing variables which all assessed varying types of marketing exposure. These questions included

"When you watched TV, how often did you see actors drinking alcohol?"

"When you watched TV, how often did you see alcohol brand names?"

"When you look at magazines or newspapers, how often do you see advertisements or promotions for alcohol?"

"When you get around Kampala, how often do you see advertisements for alcohol?"

"When you get around Kampala, how often do you see for alcohol on billboards?"

Youth could answer *never, sometimes, or often* to these questions. Once the variable marketing exposure was created the generated score was broken into two categories on a scale of five to fifteen, *moderate to high marketing exposure,* and *low marketing exposure.* Moderate to high marketing exposure was expressed as anyone who had a score of ten or above and low marketing exposure was expressed as anyone who received a score below ten.

A secondary predictor variable included the community location which the youth participated in the survey. This question was assessed simply by the center the survey was taken at. There was a total of 7 communities in which the survey was administered including: Bwaise(1), Kamwokya(3), Makindye(4), Nakulabye(5), Nateete(6), and Mukono(7). However, one community was removed as it was a pilot study and is not included within the final study or analysis. With this there are a total of six communities listed within this study. Sociodemographic variables included: sex being a biological variable, and age.

3.3 Results

Descriptive statistics for the study subjects were analyzed for predictor and demographic variables. A logistic regression analysis was conducted to determine the association between alcohol marketing and alcohol consumption for the previous month and for the previous year. All analyses were done using SAS statistical software 9.3.

Among the youth participants used in this current study (n = 413, with an average age of 16.88 years), 89.1% of youth (n = 369) were found to have a high exposure to alcohol marketing (Table 1). Within this sample, there were more females (51.33%, n = 212) than males (37.77%, n = 156) who reported a high level of exposure to alcohol marketing. When looking at exposure to alcohol marketing by location, which is laid out in Table 3, Kamwokya (3) reported the highest rates of high alcohol marketing exposure (31.48%, n = 130) with the next highest being Mukono (7) (16.71%, n = 69). The location with the lowest recorded high alcohol marketing exposure was captured in Makindye (4) (5.81%, n = 24).

The overall prevalence of reported alcohol drinking status within the past year was 84.18% (n = 346). Less female participants reported drinking habits within the past year (83%, n = 191) than males (84%, n = 155). Kamwokya (3) also was recorded as having the highest drinking prevalence of the communities examined (27.25%) followed next by Nateete (6) (16.79%). Within the location surveyed, the community with the lowest drinking percentage was Makindye (4) (6.33%).

The prevalence of reported alcohol drinking status during the last 30 days was higher than that of the drinking within the previous year at 94.49% (n = 326). However, more female participants reported alcohol consumption within the last 30 days (95.8%, n = 184) than males

(93.8%, n = 142). Just like with alcohol consumption for the previous year, Kamwokya (3) had

the largest amount of reported alcohol consumption in the previous month from all youth that

said they had consumed alcohol (32.17%). Of the youth who answered the question regarding

alcohol consumption within the past month, all youth responded in Makindye (4) as having

consumed alcohol within the previous month and made up 7.54% of all youth drinkers.

The results from the logistic regression analyses are presented in Table 1 and Table 2.

When all factors and predictors were considered, alcohol marketing exposure, age, sex,

location, and religion, the overall model for alcohol consumption during the previous year

showed that: Makindye (4) had a 4.9 greater odds (95% CI 1.009, 19.999) of consuming alcohol

when compared to Bwaise (1), and Nateete (6) had a 3.57 greater odds (95% CI 1.253, 10.160)

of consuming alcohol within the precious year. Each additional year of age corresponded to an

additional 1.3 (95% CI 1.078, 1.602) greater odds of drinking in the previous year. Likewise,

each point that an individual increased on the alcohol marketing exposure scare they had 1.26

greater odds (95% CI 1.086, 1.459) of consuming alcohol within the previous year. However, it

was also seen that high alcohol marketing exposure, religion and sex did not have a significant

association. Compared to youth who had an alcohol exposure score of low (or below 10), youth

with a high level of exposure to alcohol marketing had 1.64 greater odds (95% CI 0.701, 3.830)

of consuming alcohol within the last year. It is important to note that this was not considered to

be significant.

When it came to youth alcohol consumption within the last 30 days, each additional

year of age corresponded to an additional 1.49 greater odds (95% CI 1.015, 2.179]. Youth who

had a high level of exposure to alcohol marketing also had 1.36 greater odds (95% CI 0.291,

6.595) of consuming alcohol within the past month, or 30 days. However, it is also important to note that this was also not considered to be significant.

4.4 Discussion

Alcohol consumption among youth is a well-established and serious public health problem that can lead to both short-term and long-term health complications and risky behaviors which can impact an individual for the rest of their lives including: problem in school, unprotected sexual activity, disruption of normal development, illnesses, sexual assault, alcohol related injuries, risk of suicide, issues in brain development, and even death (O'Connell & Bonnie, 2004; Miller et al., 2007; Center for Disease Control and Prevention, 2020). The overall purpose of this study was to 1) to determine the overall impact of alcohol marketing on the youth living in the slums and on the streets of urban Uganda, (2) determine if location plays a factor in alcohol consumption habits of youth, and (3) investigate any differences reported between monthly and yearly recorded alcohol consumption. This current study builds on the work done by Swahn and associates (2014) which found that youth were not only consuming alcohol at high rates but also being exposed to alcohol marketing in high levels. The current research expands prior work completed by examining alcohol marketing itself and the impact it has on alcohol consumption within the youth living on the street and in the slums of Kampala, Uganda. Due to the overall results of the current study the questions have been answered to the extent that the data would allow.

In regards to alcohol consumption, results show that youth ages 12 to 18 years who live on the streets and in the slums of Kampala experience a high prevalence of alcohol consumption with 84.18% of respondents having consumed alcohol within the past year and

94.49% of youth respondents having consumed alcohol within the last 30 days/month. As a note, it is important to remember that alcohol consumption was higher within the last 30 days as there was a number of individuals who reported annual drinking but did not indicate monthly and as such the response rate was smaller. This reported alcohol consumption is much higher than alcohol consumption reported within youth / adolescents living on the streets within high-income countries. One study which focused on youth ages 16-19 in midwestern cities of the United States estimated that 42.5% of the youth surveyed were alcohol users (Chen et al., 2006) while another study based out of Texas showed results of 19.5% of youth living on the streets and surveyed as alcohol users but with 61.1% of them reporting that they were alcohol dependent (Gomez, Thompson & Barczyk, 2010). Within low-income countries few studies have focused solely on the alcohol consumption of alcohol of youth, and further still have focused on youth living in the slums and on the streets. Studies conducted within Uganda and Nigeria examined drinking rates among adolescent students in coloration with other public health issues, however the results also showed lower rates of alcohol consumption among those surveyed then the current research. In Uganda 17.7% reported alcohol consumption (with 26.6% of males and 49.2% of females reporting alcohol use) and in Nigeria 53% of youth males included in the survey were current alcohol users and 22% of youth females were (Rudatsikira et al., 2007; Fatoye, 2003). One possibility is that with alcohol consumption not being a main focus of most studies, it is not in turn focused on as heavily in the data collection stage. Another possibility is that, and even in more low-income areas, the amount of alcohol consumption and exposure that the youth living in the slums and on the street experience is simply much higher than that of the youth who have participated within previous research.

While this current study was not able to show that higher rates of alcohol marketing exposure was a significant indicator of alcohol consumption over low alcohol marketing exposure using the dichotomized exposure index, it is still important to remember that 89% of the youth had a high exposure to alcohol marketing. Few studies have addressed youth alcohol consumption through alcohol marketing exposure. One study focused in Europe did discover that different frequencies to online alcohol marketing exposure did have an impact on drinking behavior (Bruijn et al., 2016). However, for the target population of this study, online exposure to alcohol marketing is not the main method that youth are exposed to (as some youth are exposed through television, but the majority are exposed through radio and paper marketing).

When looking at the locations where the survey was taken and alcohol marketing (Refer to Table 3 as needed), it is interesting to note that Kamwokya (3) not only has the highest percentage of its participants exposed to alcohol marketing, but it also has the highest number of responses overall. Looking at the response to this location against the others it can still be seen that very limited percentages of study participants even qualify as having low alcohol marketing exposure. With that in mind, it further emphasizes the amount of alcohol marketing that youth are receiving and how almost no one is immune from witnessing it within these communities.

Some of the key limitations to this current study have to do with sample design and limited sample size. The data were collected from a convenience sample which can in turn limit the overall generalizability of the study results. However, a convenience sample is useful when trying to obtain data from a hard to reach population such as youth living in slums and on the street. Likewise, though, this current study chose to look only at respondents who had qualified

as drinkers as they were the only ones to answer questions regarding both alcohol consumption within the last year, the last 30 days, and questions regarding alcohol marketing. However, as an under-researched and hard to reach population, marginal advancement in the amount of collective research we have aids to not only the conduction of future research, but also the protection of such communities as the youth of Kampala, Uganda. Data was also collected in 2014 and does not account for any recent changes that could have occurred within the population in the past few years. Larger samples should be used in the future to allow for more secure analyses.

3.5 Conclusions and Further Direction

Alcohol consumption and high exposure to alcohol marketing is vastly prevalent among the vulnerable population of Uganda youth living in Kampala. With nearly all of the youth experiencing high exposure to alcohol marketing and over three-quarters of the youth consuming alcohol in both the short-term and long-term. These findings shine a light on the need for not only interventions to address the rate of alcohol consumption within youth living in the slums of Kampala, but also interventions targeted at mitigating damage that comes from the excessive exposure to the alcohol industry. As it has been seen within previous research, most studies focus on alcohol as a single factor of other public health concerns which in turn may limit the attention that youth alcohol consumption is due. Some of the future research conducted should focus specifically on youth alcohol consumption and the factors that influence it rather than alcohol consumption as the factor; especially within the context of low-income areas of the world. This in turn could not only aid in reducing the risk of other illnesses,

but could also have a positive impact on the targeted population of youth living in Kampala, Uganda.

Policy is being developed in Uganda in regards to alcohol regulation, however more policy should be created in terms of the alcohol marketing that is distributed across the country. The alcohol marketing should no longer be self-regulated and should instead follow the guidelines presented by the International Alliance for Responsible Drinking (International Alliance for Responsible Drinking, 2011). Future research should focus on the alcohol marketing that is seen as most impactful towards youth, along with more research done into the rates of exposures that youth have towards alcohol marketing. These future studies should include larger sample sizes to provide a broader picture of how marketing impacts youth at the different levels of exposure.

Future research should also focus on low-income areas and interventions to minimize alcohol consumption as this will both directly and indirectly address other public health issues, and also provide ways to help researchers, public health workers, and populations reach a better understanding of health towards a population that is so often forgotten.

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Table 1. Demographic characteristics and prevalence among ever drinking youth living in the slums of Kampala who consumed alcohol within the past year (*n* = 411)

	Consumed alcohol (n =346)	Did not consume alcohol (n = 65)	Total (n = 411)	Odds Ratio for alcohol consumption
Age, *M*	(16.62)	(16.91)	(16.88)	**1.31 [1.078, 1.602]**
Marketing Exposure	(12.06)	(11.52)	(11.79)	**1.26 [1.086, 1.459]**
Sex, *n* (%)				
Male	155 (84.7%)	28 (15.3%)	183 (44.53%)	Ref
Female	191 (83.7%)	37 (16.3%)	228 (55.47%)	0.93 [0.55, 1.59]
Marketing Exposure				
Low Exposure	36 (8.75%)	9 (2.19%)	45 (10.94%)	Ref
High Exposure	310 (75.43%)	56 (13.63%)	368 (89.06%)	1.64 [0.701, 3.830]
Location				
Bwaise (1)	31 (7.54%)	11 (2.68%)	42 (10.22%)	Ref
Kamwokya (3)	112 (27.25%)	28 (6.81%)	140 (34.06%)	1.38 [0.584, 3.261]
Makindye (4)	26 (6.33%)	3 (0.73%)	29 (7.06%)	**4.49 [1.009, 19.999]**
Nakulabye (5)	45 (10.95%)	7 (1.70%)	52 (12.65%)	2.48 [0.815, 7.517]
Nateete (6)	69 (16.79%)	8 (1.95%)	77 (18.74%)	**3.57 [1.253, 10.160]**
Mukono (7)	63 (15.33%)	8 (1.95%)	73 (17.28%)	2.61 [0.897, 7.586]
Religion				
Christian-Catholic	144 (35.04%)	27 (6.57%)	171 (41.61%)	Ref
Christian-Other	134 (32.60%)	24 (5.84%)	158 (38.44%)	0.97 [0.521, 1.806]
Muslim	43 (10.46%)	13 (3.16%)	56 (13.63%)	0.59 [0.267, 1.283]
African Traditional	7 (1.70%)	1 (0.24%)	8 (1.95%)	1.67 [0.184, 15.164]
Other	18 (4.38%)	0 (0%)	18 (4.38%)	>999 [0.001, >999.99]

*Two observations deleted due to missing responses for alcohol consumption question (*N = 411*)
Significant findings are bolded and at α=0.05 (p< .05)
P-Value comes from a logistic regression analysis

Table 2. Demographic characteristics and prevalence among ever drinking youth living in the slums of Kampala who consumed alcohol within the past month (*n* = 345)

	Consumed alcohol (n =326, 94.49%)	Did not consume alcohol (n = 19, 5.51%))	Total (n = 345)	Odds Ratio
Age, *M*	(16.62)	(16.91)	(16.88)	**1.49 [1.015, 2.179]**
Sex, *n* (%)				
Male	142 (92.8%)	11 (7.2%)	153 (44.35%)	Ref
Female	184 (95.8%)	8 (4.2%)	192 (55.65%)	1.03 [0.346, 3.052]
Marketing Exposure				
Low Exposure	33 (9.57%)	3 (0.87%)	36 (10.44%)	Ref
High Exposure	293 (84.93%)	16 (4.64%)	309 (89.57%	1.39 [0.291, 6.595]
Location				
Bwaise (1)	21 (6.09%)	9 (2.61%)	30 (8.7%)	Ref
Kamwokya (3)	111 (32.17%)	1 (0.29%)	112 (32.46%)	70.12 [7.456, 659.376]
Makindye (4)	26 (7.54%)	0 (0%)	26 (7.54%)	>999 [0.001, >999.999]
Nakulabye (5)	42 (12.17%)	3 (0.87%)	45 (13.04%)	10.99 [2.222, 54.441]
Nateete (6)	63 (18.26%)	5 (1.45%)	68 (19.71%)	8.56 [2.198, 33.373]
Mukono (7)	63 (18.26%)	1 (0.29%)	64 (18.55%)	50.26 [4.497, 561.731]
Religion				
Christian-Catholic	134 (38.84%)	8 (2.32%)	142 (41.16%)	Ref
Christian-Other	128 (7.10%)	7 (2.03%)	135 (39.13%)	1.27 [0.398, 4.019]
Muslim	40 (11.59%)	3 (0.87%)	43 (12.46%)	1.759 [0.351, 8.818]
African Traditional	7 (2.03%)	0 (0%)	7 (2.03%)	>999 [0.001, >999.999]
Other	17 (4.93%)	1 (0.29%)	18 (5.22%)	0.43 [0.036, 5.143]

*68 observations deleted due to missing responses for alcohol consumption question (*N = 345*)

Significant findings are bolded and at α=0.05 (p< .05)
P-Value comes from a logistic regression analysis

Table 3. Alcohol marketing exposure by Location (*n* = 413)

	Low alcohol marketing exposure (n =44, 10.65%)	Moderate to high alcohol marketing exposure (n = 368, 89.10%))	Total (n = 413)
Location			
Bwaise (1)	2 (0.48%)	40 (9.69%)	42 (10.17%)
Kamwokya (3)	10 (2.42%)	130 (31.48%)	140 (33.90%)
Makindye (4)	5 (1.21%)	24 (5.81%)	29 (7.02%)
Nakulabye (5**)**	10 (2.42%)	42 (10.17%)	52 (12.59%)
Nateete (6)	14 (3.39)	63 (15.25%)	77 (18.64%)
Mukono (7)	4 (1.21%)	69 (16.71%)	73 (17.68%)