

Assessing alcohol consumption patterns in Jinja and Masindi districts

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Abstract

Background

Uganda National Association of Community and Occupational Health (UNACOH) implemented a workplace and community based alcohol control intervention in the districts of Masindi and Jinja in Uganda where alcohol is highly consumed. UNACOH therefore conducted an end-of year evaluation with a main focus on two of the project' anticipated outcomes. These include:1) Reduced risky alcohol consumption patterns among the communities in the project area especially among vulnerable and high risk groups (elderly, youth, women, commercial motorcyclists and fisher folk) by 2021 and 2) Legal restrictions on density of alcohol outlets, accessibility to minors and availability are in place in Masindi and Jinja district by 2021 .The main objective was therefore to assess alcohol consumption patterns among drinkers, perceptions about community awareness of alcohol control regulations and their perceived effectiveness in the project area (Masindi and Jinja) in the year 2020.

Methods

This was a cross-sectional evaluation conducted among 310 respondents in selected villages within the intervention Sub Counties of the Districts in the project area. These included; These included Karujubu Division,Miirya and Pakanyi Sub Counties in Masindi District, and Bugembe Town Council,Walukuba-Masese Division and Budondo Sub County in Jinja District. The primary outcomes were; reduced risky alcohol consumption patterns among the communities and presence of legal restrictions on density of alcohol outlets, accessibility to minors and availability. Quantitative data were entered and cleaned using Epi-data version 4.6.0.2 analyzed using STATA version 12.0. Descriptive analysis was used to generate information on the alcohol consumption patterns.

Results

Findings indicated that majority drinkers were male (71.34%) with only 0.93% below the age of 18 years. Spirits were the commonest type of alcohol consumed (40.78%). Risky alcohol consumptions were reported by nearly half (48.71%) of the drinkers. Male drinkers (81.88%) and those in Jinja (58.97%) reported significantly higher alcohol consumption in comparison with female drinkers (18.12%) and those in Masindi (38.31%) respectively. ($\chi^2 = 15.74$ and p value of 0.000 and $\chi^2 = 13.24$ and p = 0.000).

Conclusion

Variation in risky alcohol consumption between the project areas could be attributed to differences in implementation of alcohol control regulations. In some project areas, communities were aware of alcohol control regulations and thought these had been beneficial in reducing alcohol related harm. Risky consumption among drinkers remained relatively high. If these negative trends are not reversed they could significantly increase the non-communicable disease burden including mental health.

Introduction

Alcohol consumption in Uganda is the highest in East Africa region¹. Individuals above 15 years in Uganda drink a total of 26 liters of pure alcohol per year. It therefore follows that nearly 10% of Ugandan have alcohol use disorders.² If these negative trends are not reversed they could significantly increase the non-communicable disease burden including mental health.³ In response to this challenge, Uganda National Association of Community and Occupational Health implemented a Community and Alcohol Control Project in sugar producing communities since 2012 with the support from IOGT.NTO Movement-Sweden. This project is implemented in Jinja and Masindi districts where harmful consumption of alcohol was found to be highly prevalent. The availability and affordability of raw materials for alcohol production in these communities presents an opportunity for high alcohol production and therefore harmful consumption. Sugar industries produce molasses as a by-product. This is used in the production of local gin "*waragi*". The alcohol produced and consumed in these situations is crude and unregulated. The project aimed to improve the health and socio-economic wellbeing of people in sugar producing industries and surrounding communities in Jinja and Masindi districts in Uganda. It intends to achieve the following outcomes: i) Reduced risky alcohol consumption patterns among the communities in the project area especially among vulnerable and high risk groups (elderly, youth, women, commercial motorcyclists and fisher folk) by 2021 ii) Legal restrictions on density of alcohol outlets, accessibility to minors and availability are in place in Masindi and Jinja district by 2021 iii) Alcohol issues are included in the government activities through the established alcohol control platforms in the project areas by 2021 iv) UNACOH is able to implement alcohol control programs, serve communities and report to donors.

The above mentioned outcomes would be achieved through the following; Sensitizing communities on how to prevent and control the harmful use of alcohol, Supporting workplace and community alcohol control campaigns spearheaded by community groups (women, youth, commercial cyclists, and fisher folk, elderly and cultural music dance and drama groups), Village Health Teams (Community health care workers) and selected trained industry workers, Advocating for the formulation and implementation of alcohol control regulations at Sub County, District and National level, Establishing and supporting school clubs to spearhead underage drinking prevention campaigns, Supporting the development of employee assistance programs and work place policies on alcohol control and, Conducting alcohol related research to provide the extent and magnitude of the harmful use of alcohol problem. This project was implemented with other stakeholders including Jinja District Local Government, Masindi District Local Government, Kakira Sugar Limited and Kinyara Sugar Works Limited. Therefore this study aimed to assess alcohol consumption patterns among drinkers, perceptions about community awareness of alcohol control regulations and their perceived effectiveness in the project area (Masindi and Jinja) in the year 2020.

Methods

Study design and settings

This was a cross-sectional study employing both quantitative and qualitative methods. Structured interviews were conducted using an adapted version of the World Health Organization's Alcohol Use Disorders Identification Test (AUDIT) questionnaires for assessing alcohol disorders. Focus group discussions were used to obtain information on perceptions about community awareness of alcohol control regulations and their effectiveness. The study area included selected villages within the intervention Sub Counties of the Districts in the project area. These included Karujubu Division, Miirya and Pakanyi Sub Counties in Masindi District, and Bugembe Town Council, Walukuba- Masese Division and Budondo Sub County in Jinja District.

Study domain, eligibility and sampling

Study population included self-reported alcohol drinkers in selected villages in the project intervention areas in Masindi and Jinja Districts. The alcohol drinkers in the project area who consented to participate in the study were included. Those who were intoxicated at the time of the study and did not have the capacity to accurately respond to the questions asked were excluded from the study.

Multi-stage sampling was used to select the study sample for quantitative data. Out of the 11 sub-counties/divisions in Masindi District and 9 sub counties/divisions in Jinja District, 6 sub counties/divisions where the Alcohol Control Project was then being implemented were purposefully sampled. Within these intervention divisions/ sub counties all parishes/wards were selected. Following this, one village was randomly selected in each parish/ward. A random sample of 30 villages was selected from the 115 villages with an active alcohol community campaign. Following this, 10 self-reported alcohol drinkers from each village were selected using convenience sampling.

For qualitative data, purposive sampling with maximum variation was used to select men, women and youth to be included in the focus group discussions. This was done to facilitate obtaining diverse viewpoints.⁴

Data collection and study variables

Quantitative data was collected using an adapted version of the World Health Organization's AUDIT questionnaire. This was used to identify persons whose alcohol consumption pattern had become risky and possibly harmful to their health. The AUDIT questionnaire consists of three domains including risky consumption that is frequency of alcohol intake, typical drinking patterns and presence of heavy episodic drinking (questions 1–3), alcohol dependence that is the behavioral, mental and physical results of continued alcohol use including withdrawal symptoms and impaired judgment (questions 4-6) and experience of alcohol related problems that is alcohol-related physical, mental and social harms that result from problematic alcohol usage both in the present and in the past (Questions 7–10)⁵ formed the basis.

Before data collection, the questionnaires were reviewed by the evaluation team and adapted to the Ugandan setting. The survey questions were also translated by indigenous experts into Luganda, Runyoro

and Lusoga languages. Data was collected by research assistants residing outside the project area who had been trained in research ethics and handling of human subjects. For qualitative data, selected participants were invited to participate in focus group discussions. All focus group discussions were audio-recorded. Focus group discussions were conducted until data saturation was reached after conducting 6 focus group discussions among men, 6 focus group discussions among women and 6 focus group discussions among youths. Risky alcohol consumption was defined as frequency of alcohol consumption, alcohol consumption patterns and frequency of heavy drinking that put an individual at a risk of experiencing social or medical alcohol related problems. A score of greater than 4 for questions 1 to 3 on the AUDIT questionnaire was characterized as risky alcohol consumption.⁵ Heavy episodic drinking was defined as the proportion of drinkers who had at least had six (6) or more drinks in a single occasion in the last 30 days.¹ Alcohol dependence was defined based on the International Classification of Disease 10 (ICD-10) Classification of Mental and Behavioral Disorders diagnostic guidelines of Alcohol dependence syndrome⁶. A score of greater than 4 for questions 4 to 6 on the AUDIT questionnaire was characterized as alcohol dependence. Alcohol related problems was defined as experience of guilt after drinking, inability to remember previous night's events after heavy drinking, Alcohol-related injuries and other people being concerned about that individual's drinking. Age was categorized into three groups which are categories to represent group 1 (15 - 24 years), group 2 (25 - 34 years), group 3 (35 years and above). Gender was categorized into male and female.

Statistical analysis

Quantitative data were entered and cleaned using Epi-data version 4.6.0.2 analyzed using STATA version 12.0. Descriptive analysis was used to generate information on the alcohol consumption patterns. Categorical data were summarized using frequencies and percentages. For qualitative data, data were recorded, transcribed and translated to English. Data was analysed by thematic analysis using Atlas ti8. A coding framework was initially developed. Sub-themes were consequently generated, and data coded.

Results

Demographic characteristics of respondents

A total of 310 self-reported alcohol drinkers participated in the study. Majority of alcohol drinkers were male (71.34%) as shown in Table 1 below. Though in Masindi there was a relatively significant proportion of female drinkers (35.94%). A considerable proportion (18.03%) of drinkers were young (below 25 years) with only (0.93%) of respondents being underage.

Table 1
Demographic characteristics of respondents

	Masindi	Jinja	Total
Demographics			
Gender	64.05%(98)	78.57%(121)	71.34%(219)
Males	35.95%(55)	21.43%(33)	28.66%(88)
Females			
Age group	24.34%(37)	11.76%(18)	18.03%(55)
15–24 years	21.05%(32)	35.95%(55)	28.52%(87)
25–34 years	54.61%(83)	52.29%(80)	53.44%(163)
35 years and above			

Alcohol consumption patterns

The commonly consumed type of alcohol was spirits (40.78%) as shown in Table 2 below. Other types of alcohol mainly consisted of industrial fermented drinks such as “kombucha” with varying alcohol content. Consumption score based on responses of questions 1-3 of the AUDIT questionnaire indicated considerable proportion of drinkers having risky alcohol consumption patterns (48.71%). Risky alcohol consumption patterns were higher (58.97%) in Jinja compared to Masindi (38.31%). This difference was statistically significant ($\chi^2=13.24$ and $p = 0.000$ which is less than 0.05. Particularly, heavy episodic drinking (consumption of 6 or more drinks in the last 30 days), was reported by 17.74% of the drinkers. Male drinkers reported higher proportion of risky alcohol consumption (81.88% compared to female drinkers (18.12%). This difference was statistically significant ($\chi^2 =15.74$ and p value of 0.000 which is less than 0.05). Risky alcohol consumption was mostly reported among those aged 35 years and above (50.34%) in comparison with those aged 25 to 34 year olds (32.65%) and 15 to 17 year olds (17.01%). However, these differences were not statistically significant (2.3723 and p value of 0.305 which is greater than 0.05.

Table 2: Alcohol consumption patterns

	Masindi	Jinja	Total
<i>Type of alcohol commonly consumed</i>			
Local brew	20.13%(31)	29.03%(45)	24.60%(76)
Beer	17.53%(27)	22.58%(35)	20.06%(62)
Wine	3.90%(6)	5.16%(8)	4.53%(14)
Spirits	39.61%(61)	41.94%(65)	40.78%(126)
Others	18.83%(29)	1.29%(2)	10.03%(31)
<i>Heavy episodic drinking</i>			
Yes	34.42%(53)	41.03%(64)	37.74%(117)
No	65.58%(101)	58.97%(92)	62.26%(193)
<i>Risky Consumption levels</i>			
Yes	38.31%(59)	58.97%(92)	48.71%(151)
No	61.69%(95)	41.03%(64)	51.29%(159)

Alcohol dependence and alcohol related problems

Only 31.72% of respondents were alcohol dependent as shown in Table 3 below. There were more males (78.13%) with alcohol dependence compared to females (21.88%). However, this difference was not statistically significant ($\chi^2 = 3.2348$ and p value of 0.072 which is greater than 0.05). Respondents with alcohol dependence were mainly in older age groups with 43.75% aged 24 to 35 years, 42.71% aged 35 years and above in comparison to the young age group 15 to 24 years (13.54%). These differences were statistically significant ($\chi^2 = 15.7791, p=0.000$ which is less than 0.05). Majority of the respondents (85.81%) had experienced alcohol related problems based on their score of 3 questions including feeling guilty about their drinking, forgetting what happened the previous day due to their drinking, and hurting someone as a result of their drinking.

Table 3: Alcohol dependence and alcohol related problems

	Masindi	Jinja	Total
<i>Alcohol Dependence</i>			
Yes	25.97% (40)	37.42% (58)	31.72% (98)
No	74.03% (114)	62.58% (97)	68.28% (211)
<i>Alcohol related problems</i>			
Yes	82.47% (127)	89.10% (139)	85.81% (266)
No	17.53% (27)	10.90% (17)	14.19% (44)

Trends in risky alcohol consumption patterns between 2018 and 2020

Overall, alcohol consumption levels remained fairly consistent, despite a slight reduction in 2019 as illustrated in Figure 1 below. However, at district level, risky alcohol consumption levels reduced in Masindi (from 56.92% to 38.31%) and increased in Jinja (42.98% to 58.97%) between 2019 and 2020.

Perceptions about the coverage and effectiveness of alcohol control regulations in the project area.

In Masindi, respondents reported being aware of alcohol control regulations in their area. These regulations mainly comprised of restriction on hours alcohol was available for sale and limiting access of alcohol to minors in the area. Based on these regulations, legal operating hours of alcohol sale points ranged from 10:00am/12:00 noon to 10:00pm/12:00 midnight.

In some areas, these legal restrictions were reported to result into reduced alcohol consumption, increased productivity, improved social relationships including reduced violence.

".....because alcohol sale points are not open in the morning, people now first go to work before drinking alcohol...they come back at 3:00pm and therefore end up drinking less.... With less drinking people are thinking of developmental issues like saving, building better houses and providing for their families.... in addition, they are now earning more as they spend more time working...Previously, there would be many fights but now these have greatly reduced..." **Participant 4, Alimugonzaii village, Male Focus Group Discussion.**

"... people used to start drinking early in the morning, by lunch time most were already drunk.... fighting, using abusive language and throwing stones at each other every day...some cases were really bad and used to end up in hospital...now with less time to drink, we only have one or two cases in a month.." **Participant 1, Kahara ii village, Female Focus Group Discussion.**

*“... These regulations have helped married women like us....(smiles)....because bars close early our husbands come back early and sober so there are less fights....we can now have cordial discussions about our children and future plans for our family...”***Participant 3,Kahara ii village, Female Focus Group Discussion**

However some respondents indicated that these regulations had limited effectiveness because the communities were not willing to comply with them.

“.....in our area people have refused to comply with these regulations... they enter bars early and drink while the doors are closed before the stipulated time.... consequently there are no changes in alcohol consumption or its effects in our community...” **Participant 2, Kijogoro village, Youth focus group discussion**

On the other hand, respondents in Jinja reported limited awareness of any alcohol control regulations in the area.

*“...in our area people do not know of any alcohol control regulations. Alcohol sale points operate 24 hours a day....children can easily access alcohol and other drugs...”***Participant 7,Lukolo West village, Youth focus group discussion**

“...there are no alcohol control regulations in our community.....alcohol is one of the highest selling commodities in our community... as a result every business has started incorporating alcohol to their merchandise. Now every shop, hair salon and grocery stall sells alcohol with no limitations...” **Participant 2, Kalina zone, Female focus group discussion**

Discussion.

The results of the evaluation indicated high levels of risky alcohol consumption. This lends to support national level findings reported in WHO Alcohol and Health status report 2018 that indicate high levels of alcohol consumption among drinkers of 26L of pure alcohol per capita.¹ Similarly, the study indicated males making up the larger proportion of alcohol drinkers. In comparison the previous evaluation(2019) there was an increase in female drinkers from 25.99% in 2019 to 28.66% in 2020.This could be explained by an increasing levels of alcohol consumption among women in Africa.⁷In comparison to the baseline study findings ASA 2017,there was a further reduction in the proportion of underage alcohol drinkers from 3.6% (2017),1.7%(2018) to 0.98%(2020).This could be attributed to the implementation of the approved by-laws in 2018 period and awareness campaigns.

Spirit alcohol was the most commonly consumed alcohol. This could be attributed to their availability (locally produced in the intervention area) and affordability (costing about 600 Uganda shillings on average). These have a high alcoholic content and are more likely to result in alcohol dependence if consumed regularly.

Unlike previous evaluations (2018 and 2019), risky consumption levels were higher in Jinja compared to Masindi. This could be attributed to the implementation of alcohol control regulations in Masindi. Particularly heavy episodic drinking (37.74%) among drinkers in this study were relatively less than the 2018 national level (53.0%) estimates.¹ This could be attributed to the presidential directive on closing of bars and night clubs. Like previous studies^{2,8,9} conducted in Uganda men reported significantly higher levels of risky alcohol consumption.¹ Kabwama et al² indicated that males in Uganda were 2.34 times more likely to be risky alcohol consumers compared to their female counterparts. Previous qualitative findings in the Ugandan setting indicate social acceptance of alcohol especially among men with parents being proud of their male children drinking alcohol.¹⁰ Similar to previous studies^{2,9}, older respondents reported significantly higher levels of alcohol consumption. This could be due to culture where alcohol is used to manage stress, factors like unemployment and family breakdown which are more common among older persons.

The evaluation indicated an increase in risky alcohol consumption in Jinja and a reduction in Masindi. These differences could be attributed to the implementation of alcohol control regulations in Masindi and not in Jinja. These enabled Masindi to mitigate the COVID-19 related increase in risky alcohol consumption. Over a third (31.72%) of the drinkers were alcohol dependent including a need for clinical care. This presented a need for support access to clinical care as it was beyond the scope of the project. The findings lend support to the documented evidence¹¹ on the effectiveness of alcohol control regulations to limit availability in reducing alcohol related problems.

Strengths and Limitations of the evaluation.

The study used the WHO standardized Audit tool indicating that results obtained could be compared to others in other settings. However, the results should be interpreted in light of the following limitations. The study utilized a cross-sectional design with mainly descriptive statistics, consequently causal inferences between alcohol consumption levels and dependence or experience of alcohol related problems could not be ascertained. In addition, this study was based on self-reported data, as such, individual's unwillingness to acknowledge that they drunk or had problems with alcohol due to social desirability might have biased estimates. Convenience sampling methodology utilized might have limited the generalizability of the study's findings. Possible selection bias could have resulted from those with alcohol problems more likely to be included in the study as these were usually readily available in the village centers.

Conclusion

There was increased self-reported risky alcohol consumption in Jinja but not in Masindi. This could be attributed to the implementation of by-laws in Masindi and not in Jinja. There was need to implement and sustain alcohol regulations in Jinja.

Declarations

Ethics approval and consent to participate

Permission was obtained from the office of the president of Uganda. Reference number for approval committee not applicable. A memorandum of understanding was also made between the two district authorities of the study areas. Written informed consent was obtained from all participants and confidentiality was highly observed.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used during the current study are available from the corresponding author on reasonable request

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

G.M.M. and D.K.S. conceived and designed the study. P.M. and J.M. analysed the data. G.M.M., J.M. and D.K.S. reviewed the analysis. J.W. wrote the first draft of the manuscript and G.M.M., D.K.S., J.M., M.S. and M.W.W. reviewed the manuscript. All authors reviewed and agreed to the published version of the manuscript.

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Abbreviations

AUDIT

Alcohol Use Disorders Identification Test

ICD

International Classification of Disease

UNACOH

Uganda National Association of Community and Occupational Health.

VHT

Village Health Team

WHO

World Health Organization

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Figures

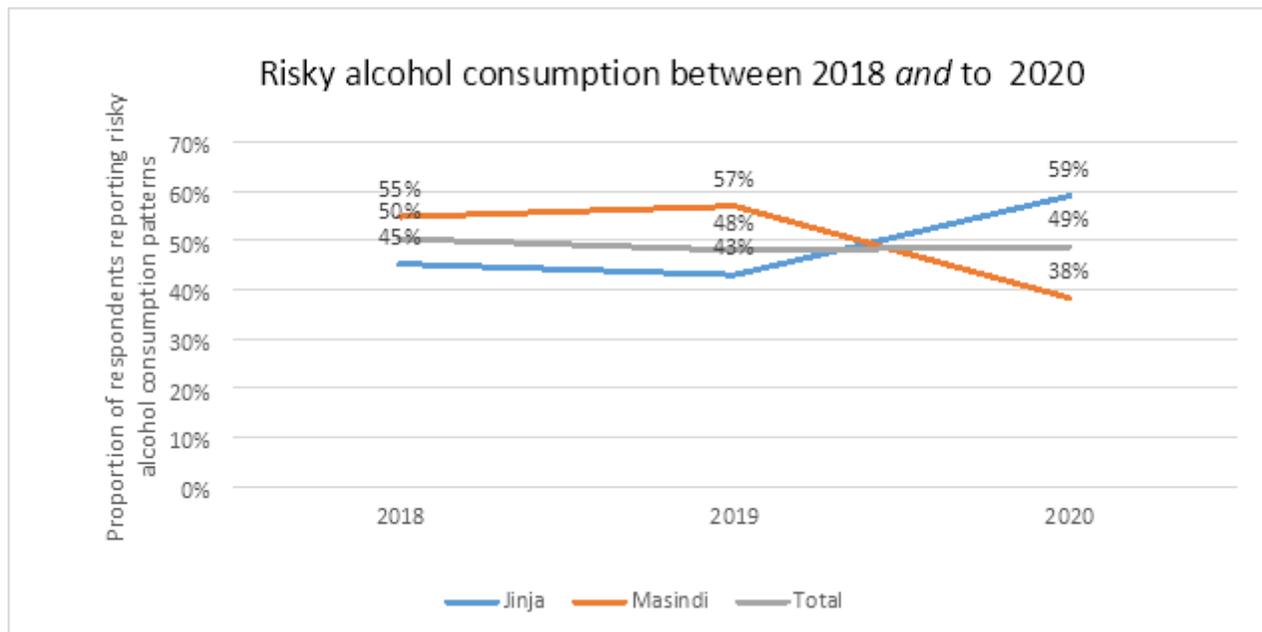


Figure 1

Trends in risky alcohol consumption patterns between 2018 and 2020