

Community Level Factors Associated with Alcohol Use Among Persons Aged 18-35 Years in Kangundo North Ward, Machakos County, Kenya

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Abstract:

Alcohol use among persons aged 18-35 years is an important Public Health issue. Alcohol abuse results in significant health, social and economic burden. It slows the progress towards the attainment of Kenya vision 2030 that envisages a healthy population free from the effects of alcohol use in order to attain the highest level of physical, social and mental health. Globally, despite this increase of alcohol use, there is limited data on the factors associated with alcohol use among persons aged 18-35 years in Kenya. This study aimed to determine the community factors associated with alcohol use among persons aged 18-35 years. This was a cross sectional study among 310 persons in Kangundo North ward. Probability Proportionate to size sampling method was used to select the study sample and a structured questionnaire used to collect data. Descriptive and inferential statistics that included univariate and multivariate logistic regression was used to analyze the data using STATA version 14. Ethical clearance was granted by Baraton University ethics board and NACOSTI. The study found significant association between advertisements, alcohol regulation and alcohol use. It concluded that Advertisement of alcohol contributes to alcohol use. (newspaper and radio were 0.11 and 0.263 times more likely to influence alcohol use). There is a significant association between administrative regulation of alcohol and alcohol use ($P < 0.05$). The study recommends targeted messaging on alcohol in advertisements and strict regulation of alcohol outlets. The study findings will help the Machakos County government to design targeted interventions to address alcohol use.

Keywords —Alcohol, Alcohol use, Community factors

I. INTRODUCTION

Alcohol is one of the psychoactive substances with dependence-producing properties and widely used in many cultures for centuries. Globally, the harmful use of alcohol is a problem and has resulted in millions of deaths, injury and violence. According to WHO, it is attributed to 5.1 % of global burden of disease and 13.5 % of the total deaths in age

group 20–39 years and is the world’s third largest risk factor for disease and disability. (WHO, 2019) According to UNDOC, harmful alcohol and substance use has multiple direct effects on adolescents and youth. The likelihood of unemployment, physical health problems, dysfunctional social relationships, suicidal tendencies, mental illness and even lower life

expectancy is increased by substance use in adolescence. In the most serious cases, harmful drug use can lead to a cycle in which damaged socioeconomic standing and ability to develop relationships feed substance use (UNDOC, 2018).

In Africa, alcohol use is on the rise, the region has the highest prevalence of heavy episodic drinking with 46% of women and 59% of male drinkers engaging in it weekly. Almost half (43%) of the people living in that region were under 14 years old ((Ferraria *et al.*, 2017). In Kenya, Use of alcohol and other substances is a social behaviour which is embedded in communities and cultures and is sustained by supply. The NACADA 2017 survey of revealed that 12.2% of respondents aged 15 – 65 years are currently using alcohol; 15.1% of respondents aged 25 - 35 years are currently using alcohol; 5.6% of respondents aged 15 – 24 years are currently using alcohol; and 0.9% of respondents aged 10 – 19 years are currently using alcohol.

Alcohol consumption in rural Kenya has been on the rise with a prevalence rate of 29.6 per cent compared to 31.7 per cent in urban area. The prevalence of alcohol use disorders among respondents aged 15 -65 years stands at 10.4% in 2017(NACADA, 2017). Having family members or friends who drink alcohol was noted as a risk factor for alcohol use (Friesen *et al.*, 2021) According to a study by Byrden and others, higher outlet density and greater exposure to advertising in a local community may be associated with an increase in alcohol use (Byrden *et al.*, 2012) Media influence contributed to alcohol use(Njeru., 2015). Higher densities of general, on- and off-premises outlets in an adolescent's immediate neighbourhood were related to increased likelihood of alcohol consumption among all adolescents. The density of licensed clubs is associated more strongly with drinking for urban than for regional adolescents.(Denise *et al.*, 2016). In a study by Pillati, the frequency of alcohol problems and frequency of episodes of alcohol intoxication were only related to age of onset in those with a positive family history of alcohol problems(Pillati *et al.*, 2014). In a study by Teferra and others, most people consumed alcoholic beverages during traditional

ceremonies, holidays or while taking respite from farm activities.(Teferra *et al.*, 2016). Local alcohol policy comprehensiveness and enforcement were associated with lower levels of past-year alcohol use (betas = -0.003 and -0.085, $P < 0.05$). Bar density was associated with a higher level of past-year alcohol use (beta = 1.086, $P < 0.01$)(Paschal *et al.*, 2014)., In Machakos County where the study area is located, drug and Substance abuse especially alcohol is a leading health problem according to a survey done on adolescents and youth(NAYS, 2015). Youth begin drinking early, often during adolescence and this is likely to prolong lifetime consumption and subject the user to an increased progression of alcohol use disorders (Stanley *et al.*, 2011).

II. METHODS AND MATERIALS

The population of this study were 310 youths aged 18-35 years residents of Kitwii location, in Kangundo Northward Kenya. The study sample size was determined using Cochran's 1999 method, and a sample size of 310 respondents obtained. Probability proportionate to Size Sampling and systematic random sampling were used to select the sample in the study area. Ethical clearance was granted by Baraton University ethics and review board and NACOSTI for approval of research. Respondents who were permanent residents of Kitwii location and gave written informed consent were included in the study. Characteristics of the communities in which the survey respondents were living were systematically recorded through structured observations of the alcohol environment (e.g. prevalence of alcohol advertisements, retail shops selling alcohol, and alcohol prices). The data collectors would locate the center of the selected community as a starting point and follow the random walk method to assess community conditions (travelling approximately 1 km in total). Descriptive statistics such as frequencies and percentages was used to analyse data. Logistic regression was used to test associations between selected variables. The significance test was set at α

= 0.05 significance level and analysis was done using STATA version 14.

III. RESULTS

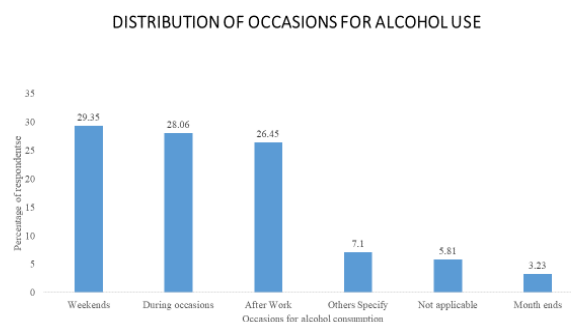
A. Community Factors Associated with Alcohol use among persons aged 18-35 years.

This study aimed to determine the community factors associated with alcohol use among persons aged 18-35 years. The participants included 310 youths from 8 villages in Kitwii location, Kangundo Northward. The findings are shown in Table 1.

| Characteristic | Yes n (%) | No n (%) |
|--|------------|------------|
| Family member who takes alcohol | | |
| Yes | 162(64.80) | 45(75.00) |
| No | 88(35.20) | 15(25.00) |
| Source of alcohol advertisement | | |
| Television | 75(30.12) | 34(56.67) |
| Radio | 48(19.28) | 13(21.67) |
| Newspaper | 8(3.21) | 5(8.33) |
| Roadshow | 5(2.01) | 0(0.00) |
| Posters | 51(20.88) | 3(5.16) |
| Audio | 56(22.49) | 4(6.67) |
| Other sources | 6(2.41) | 1(1.67) |
| Main outlet | | |
| Shops | 2(0.80) | 0(0.00) |
| Pubs | 236(94.40) | 60(100.00) |
| Local brew dens | 3(1.20) | 0(0.00) |
| Others | 9(3.60) | 0(0.00) |
| Others | 4(1.61) | 2(3.33) |

| Characteristic | Yes n (%) | No n (%) |
|-----------------------------------|------------|-----------|
| Distance of alcohol outlet | | |
| Next door | 12(4.80) | 0(0.00) |
| 100-200 metres | 96(38.40) | 11(18.33) |
| 500 – 1kilometer | 137(54.80) | 48(80.00) |
| More than 5 kilometers | 5(2.00) | 1(1.67) |
| Type of alcohol consumed | | |
| Beer | 85(34.14) | 30(50.00) |
| Wine | 17(6.83) | 7(11.67) |
| Spirits | 132(53.01) | 20(33.33) |
| Local brew | 11(4.42) | 1(1.67) |
| Others | 4(1.61) | 2(3.33) |

Table 1: Distribution of community factors associated with alcohol use.

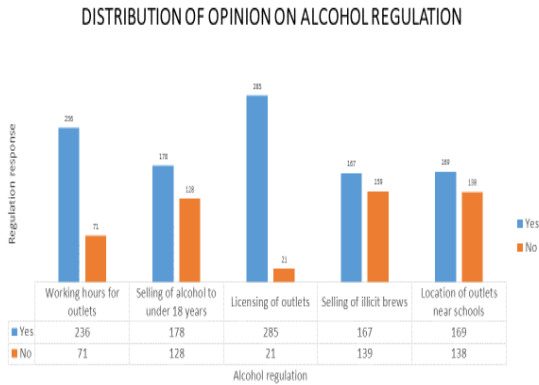


28% of respondents consumed alcohol during ceremonies, 29% weekends, 26% after work while 7% used it during other occasions.

Figure 1: Occasions for alcohol use

51% of respondents believed that alcohol relieves stress while 49% did not believe.

Figure 2. Distribution of opinion on beliefs about alcohol



76% of respondents agreed that working hours for outlets was regulated, 57% agreed that alcohol was being sold to under 18 years, 92% noted that licencing for outlets was done regularly, 54% noted that illicit brews was regulated while 55% agreed that some outlets were near schools.

Figure 3: Distribution of opinion on alcohol regulation. Univariate Analysis

As indicated in the table below, the significant factor at the univariate level is advertisement, since the p value is less than 0.05

| Alcohol use | Odds Ratio | Std. Err. | Z | P>z | 95% Conf. |
|----------------------------|---------------|---------------|-------------|--------------|----------------------|
| Family history of drinking | 0.6136 | 0.2002 | -1.5 | 0.134 | 0.324 - 1.163 |
| Advertisement | 0.7675 | 0.0582 | 3.49 | 0.000 | 0.662 - 0.891 |
| Beliefs about alcohol | 0.9267 | 0.0734 | -0.96 | 0.337 | 0.793 - 1.082 |

| Distance to outlet | 0.80 | 0.16 | - | 0.2 | 0.5 | 1.2 |
|--------------------|------|------|---|-----|-----|-----|
| | 90 | 51 | 4 | 99 | 42 | 07 |

Table 2: Univariate analysis for community level factors associated with alcohol intake

B. Multivariate Analysis

The multivariate analysis showed that advertisement was significantly associated with alcohol intake. The odds ratio is **0.7675** implying that individuals who heard of alcohol through adverts were 0.7 times were more likely to take alcohol compared to those who did not. Alcohol regulation is significantly associated with alcohol consumption.

| | OR | Std. Err. | Z | P > z | 95% CI |
|----------------|-------|-----------|------|-------|---------------|
| Reference | | | | | |
| Audio | 0.114 | 0.087 | 2.82 | 0.005 | 0.025 - 0.516 |
| Newspaper | 0.428 | 0.513 | 0.71 | 0.479 | 0.040 - 4.482 |
| others specify | 1.214 | 0.956 | 0.25 | 0.805 | 0.259 - 5.688 |
| Posters | 0.263 | 0.159 | 2.2 | 0.028 | 0.080 - 0.862 |
| Radio | 0.157 | 0.087 | 3.32 | 0.001 | 0.052 - 0.469 |
| TV | 14.5 | 7.245 | 1.5 | 0.107 | 5.07 - 38.607 |

Table 4 Multivariate analysis for community factors associated with alcohol

Use

CHI SQUARE ANALYSIS ON ALCOHOL REGULATION

| Alcohol regulation | Yes | No | Chi square | P value |
|--------------------------------------|-----|-----|------------|---------|
| Working hours for outlets | 239 | 71 | 161.26 | 0.000 |
| Selling of alcohol to under 18 years | 178 | 132 | | |
| Licensing of outlets | 285 | 25 | | |
| Selling of illicit brews | 167 | 143 | | |
| Location of outlets near schools | 169 | 141 | | |

Alcohol regulation was significantly associated with alcohol use (P<0.000)

Table 5: Chi square analysis on alcohol regulation

IV. DISCUSSIONS

The study yielded important findings on the community factors associated with alcohol use. 30% reported use of alcohol during Occasions-consistent with Singkorn that alcohol use is common during celebrations (Singkorn, 2017). Alcohol advertisement: 36% televisions, audio 20%, radio and 17% by posters. This is consistent with the findings of Jernigan on alcohol influence via marketing exposure (Jernigan *et al.*, 2017). 64.80% had a family member who takes alcohol-similar findings by Probst which showed that teenagers given alcohol by their parents are thrice more likely to be heavy drinkers in their late teens than those from families which do not supply alcohol. (Probst *et al.*, 2015). 50.32% believed that alcohol helps reduce stress. This is consistent with Beck Meyer study that revealed a significant correlation between drinking and the expectation to feel less stress (Beckmeyer, 2009). 54% of alcohol outlets were located within 500-1km of households. This is consistent with findings of Young and others that distance to nearest off-sales outlet is associated with weekly alcohol use. (Young *et al.*, 2013)

V. CONCLUSIONS

This study found out that Community factors associated with alcohol use among respondents were: advertisements and alcohol regulation was significantly associated with alcohol abuse.

ACKNOWLEDGEMENT

We acknowledge Dr. Dennis Magu and Dr. Susan Mambo, JKUAT staff, Mr. Daniel Kituku, Mr Peter Mwiti for development of manuscript and Chief Kitwii location for support in data collection, study participants for actively participating in the study.

REFERENCES

- 1) Azar, D., White, V., Coomber, K., Faulkner, A., Livingston, M., Chikritzhs, T., ... & Wakefield, M. (2016). The association between alcohol outlet density and alcohol use among urban and regional Australian adolescents. *Addiction*, 111(1), 65-72.
- 2) Bryden, A., Roberts, B., McKee, M., & Petticrew, M. (2012). A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. *Health & place*, 18(2), 349-357
- 3) Friesen, E. L., Bailey, J., Hyett, S., Sedighi, S., de Snoo, M. L., Williams, K., ... & Kurdyak, P. (2021). Hazardous alcohol use and alcohol-related harm in rural and remote communities: a scoping review. *The Lancet Public Health*.
- 4) Jernigan, D., Noel, J., Landon, J., Thornton, N., & Lobstein, T. (2017). Alcohol marketing and youth alcohol consumption: a systematic review of longitudinal studies published since 2008. *Addiction*, 112, 7-20.
- 5) L.R. Stanley, K.L. Henry, R.C. Swaim, Physical, social, and perceived availabilities of alcohol and last month alcohol use in rural and small urban communities. *Journal of youth and adolescence*, 40(9), 1203-1214. 2011.
- 6) NACADA. Annual Report for the Office of the National Campaign Against Drug Abuse. 2017
- 7) Njeru, L. W. (2015). *The impact of alcohol abuse on the welfare of rural households: a case study of Mbeti-north Ward, Embu County* (Doctoral dissertation).
- 8) Paschall, M. J., Lipperman-Kreda, S., & Grube, J. W. (2014). Effects of the local alcohol environment on adolescents' drinking behaviors and beliefs. *Addiction*, 109(3), 407-416.
- 9) Pilatti, A., Caneto, F., Garimaldi, J. A., Vera, B. D. V., & Pautassi, R. M. (2014). Contribution of time of drinking onset and family history of alcohol problems in alcohol and drug use behaviors in Argentinean college students. *Alcohol and alcoholism*, 49(2), 128-137.
- 10) Probst, C., Roerecke, M., Behrendt, S., & Rehm, J. (2015). Gender differences in socioeconomic inequality of alcohol-attributable mortality: A systematic review and meta-analysis. *Drug and alcohol review*, 34(3), 267-277.
- 11) Singkorn, O., Apidechkul, T., Putsa, B., Detpetukyon, S., Sunsern, R., Thutsanti, P., ... & Inta, C. (2019). Factor associated with alcohol use among Lahu and Akha hill tribe youths, northern Thailand. *Substance abuse treatment, prevention, and policy*, 14(1), 5.
- 12) Teferra, S., Medhin, G., Selamu, M., Bhana, A., Hanlon, C., & Fekadu, A. (2016). Hazardous alcohol use and associated factors in a rural Ethiopian district: a cross-sectional community survey. *BMC Public Health*, 16(1), 1-
- 13) World Health Organization. (2019). *Global status report on alcohol and health 2018*.