Alcohol and Tobacco Use among Men in Zambia and Zimbabwe

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Background: To date, there is no country-representative study on tobacco and alcohol use in Zambia and Zimbabwe despite the fact that these two countries rank among the top producers of tobacco worldwide. To fill this research gap, we conducted this study to measure the prevalence of tobacco and alcohol consumption among adolescent and adult men in Zambia and Zimbabwe. Special attention was given to the age differential in the prevalence of smoking and drinking.

Methods: Country-representative data on alcohol and tobacco use along with relevant sociodemographic parameters were collected from Demographic and Health Surveys. Sample population were 23,169 men (14,773 from Zambia and 8,396 from Zimbabwe) aged 15-54 years. Data were analysed using multivariate regression techniques.

Results: Prevalence of tobacco use was 19.9% (19.0-20.9) in Zambia and 18.4% (17.4-19.5) in Zimbabwe, and that of alcohol was 37.6% (36.4-38.9) in Zambia and 50.5 (48.9-52.1) in Zimbabwe. In both of the countries, the majority of the tobacco and alcohol users were aged between 24-39 years. Results of multivariate regression analysis showed a significant positive association between tobacco and alcohol use with age, place of residence, religious affiliation, marital status, education and wealth quintile.

Conclusion: Nearly one-fifth of all men in the age group of 15-54 years smoke tobacco in Zambia and Zimbabwe, with the prevalence being most pronounced among those aged between 25-39 years. The predominantly young age structure of alcohol and tobacco users warrant demographically tailored anti-tobacco and alcohol controlling programmes.

Key Words: Alcohol, Tobacco, Demographic and health survey, Zambia, Zimbabwe

INTRODUCTION

Despite growing public concern and political efforts, to-

bacco- and alcohol-induced diseases continue to be major contributors to disability and early death worldwide. For instance, tobacco consumption accounts for respectively 20% and 5% percent of all deaths among male and female population [1,2]. The prevalence of smoking has been declining in most developed countries, however, the reverse is true for many low-income countries including those in sub-Saharan Africa who are increasingly becoming the target of the tobacco industry. Shrinking market and strong anti-tobacco policy measures in the West are resulting in the shifting of multinational tobacco companies to the underdeveloped countries like Zimbabwe [3]. This transition is being greatly

facilitated by trade liberalisation and Africa's growing integration into international trade through the World Trade Organisation including that of alcohol and tobacco.

Globally, Zambia and Zimbabwe now rank among the largest tobacco producers with tobacco being a major agricultural crop and foreign currency earner [4,5]. Over the last decade, both of the countries have attracted substantial foreign direct investment in the tobacco industry and have been catering the growing needs of the expanding markets especially those in China and Indonesia. The prominence of tobacco in these two economies is better understood by their prolonged reluctance to join the Framework Convention on Tobacco Control (FCTC). The framework was signed by 168 nations around the world in 2003, with Zambia and Zimbabwe being among the latest signatories (date of accession are 2008 and 2014 respectively). Evidence on alcohol use is less prevalent, however, some sources suggest that multinational FDI on tobacco is being paralleled with that on alcohol as well.

No wonder, growing domestic production coupled with the elimination of export-import restrictions are translating to increased consumption of alcohol and tobacco especially given the predominantly young demographic and rising purchasing power of the population [6-8]. In Zambia, for example, 40.8% of adolescents (36.7% of boys and 45.2% of girls) have ever drunk alcohol [9]. Studies have shown that people who smoke are more likely to drink alcohol and vice versa, aggravating the individual effects of each other [10]. The consequences of smoking and drinking go far beyond the direct alcohol- and tobacco-induced damages and are associated with numerous physical and psychosocial disorders that are particularly challenging for Africa e.g. higher risk of HIV infection [11], malaria [12], tuberculosis [13], depression [14] and intimate partner violence [15].

Factors associated with alcohol and tobacco use have been studied for a number of countries in Africa. However, little is known about Zambia and Zimbabwe. A better understanding of the prevalence of and distribution of smoking and drinking behaviour among the sociodemographic groups are critical to developing evidence-based tools for minimising the use, particularly in countries like Zambia and Zimbabwe who have long been the target of aggressive marketing and generally suffer from weak policy enforcement.

To better inform policy action, we made use of the Demographic and Health Survey data conducted in Zambia and Zimbabwe which provide nationally representative data on various health indicators including smoking and drinking.

MATERIALS AND METHODS

1. Data source

Data for this study were collected from Zambia and Zimbabwe demographic and health survey. DHS surveys were carried out by Central Statistical Office (CSO) in partnership with the Ministry of Health in Zambia, and Zimbabwe National Statistics Agency in Zimbabwe. DHS surveys provide nationally representative data on a wide range of indicators including demographics, maternal and child health, and health-related behaviour such as smoking and alcohol drinking. The surveys employ two-stage cluster sampling design that interview eligible individuals (Age 15-49 year for women and 15-54 years for men) from households nested within primary sampling units. Details of sampling techniques were published elsewhere [16,17]. Data for this study were selected from men's survey.

2. Variables

The outcome variables were alcohol and tobacco consumption. In face-to-face interviews participants were asked whether or not they are currently smoke tobacco and drink alcohol. Based on the answers they were grouped as: "Yes" or user of tobacco, and "No" or non-user.

The analysis included several demographic, socioeconomic and media use related factors as the independent variables. These variables were selected based on their already known association and/or conceptual relationship with the outcome variables: Age groups (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59); Residency (Urban, Rural); Education (No education, Primary, Secondary/ higher); Religion (Christian, Other); Wealth index quintile (Poorest, Poorer, Middle, Richer, Richest) [18]; Marital status (Unmarried, Married); Occupation (Unemployed, Service Agri/other); Reads Newspaper (Never, < once a week, At least once a week); Listens to Radio (Never, < once a week, At least once a week); watches TV (Never, < once a week, At least once a week) [19].

Table 1. Sample profile (N = 23,169)

	Zambia (n= 14,773)		Zimbabwe (n= 8,396)	
	Smoking (%) 19.9 (19.0-20.9)	*Drinking* (%) 37.6 (36.4-38.9)	*Smoking* (%) 18.4 (17.4-19.5)	*Drinking* (%) 50.5 (48.9-52.1)
Age groups				
15-19	3.5 (2.7-4.5)	5.1 (4.4-5.9)	3.2 (2.4-4.3)	10.8 (9.8-11.8)
20-24	10.6 (9.4-12.0)	13.5 (12.5-14.6)	13.3 (11.5-15.4)	15.8 (14.5-17.2)
25-29	16.4 (14.9-18.1)	16.1 (14.9-17.3)	20.6 (18.2-23.2)	16.8 (15.5-18.2)
30-34	17.0 (15.5-18.7)	17.7 (16.5-19.0)	22.0 (19.5-24.7)	17.3 (15.9-18.8)
35-39	14.0 (12.5-15.7)	15.2 (13.8-16.7)	14.4 (12.5-16.6)	13.5 (12.3-14.9)
40-44	14.3 (13.0-15.8)	12.9 (11.8-14.0)	11.7 (9.8-13.9)	11.4 (10.3-12.6)
45-49	11.7 (10.3-13.2)	9.0 (8.2-10.0)	7.6 (6.2-9.2)	8.4 (7.3-9.6)
50-54	7.1 (6.1-8.3)	5.9 (5.2-6.7)	7.2 (5.9-8.8)	6.0 (5.2-6.8)
55-59	5.3 (4.4-6.3)	4.5 (3.9-5.2)	3.2 (2.4-4.3)	10.8 (9.8-11.8)
p-value	<0.001	<0.001	<0.001	<0.001
Residency				
Urban	38.9 (36.3-41.6)	49.6 (47.4-51.8)	32.0 (28.6-35.7)	43.3 (40.6-46.0)
Rural	61.1 (58.4-63.7)	50.4 (48.2-52.6)	68.0 (64.3-71.4)	56.7 (54.0-59.4)
p-value	<0.001	0.002	<0.001	<0.001
Education				
No education	6.2 (5.2-7.4)	4.5 (3.7-5.4)	1.2 (0.7-2.1)	0.8 (0.5-1.2)
Primary	53.2 (50.9-55.5)	41.3 (39.3-43.3)	30.6 (27.5-33.8)	22.7 (20.8-24.7)
Secondary/higher	40.6 (38.3-43.0)	54.2 (52.1-56.3)	68.2 (64.8-71.4)	76.5 (74.4-78.5)
p-value	<0.001	<0.001	<0.001	0.237
Religion				
Christian	95.0 (97.0-96.2)	97.6 (97.0-98.1)	58.7 (55.4-61.9)	74.7 (72.7-76.5)
Other	3.0 (5.0-3.8)	2.4 (1.9-3.0)	41.3 (38.1-44.6)	25.3 (23.5-27.3)
p-value	<0.001	0.014	<0.001	<0.001
Wealth quintile				
Poorest (lowest)	26.8 (24.6-29.1)	18.5 (17.0-20.1)	21.0 (18.2-24.0)	14.5 (12.8-16.4)
Poorer	21.9 (20.1-23.8)	17.3 (16.0-18.7)	21.2 (18.6-24.0)	16.4 (14.8-18.0)
Middle	17.5 (15.5-19.6)	15.8 (14.3-17.6)	17.7 (15.3-20.4)	15.8 (14.2-17.5)
Richer	20.4 (17.9-23.1)	23.0 (20.6-25.6)	23.7 (20.0-27.9)	25.2 (22.2-28.3)
Richest (highest)	13.5 (11.5-15.7)	25.4 (22.4-28.6)	16.4 (13.9-19.3)	28.2 (25.3-31.2)
p-value	<0.001	<0.001	<0.001	<0.001
Marital status				
Unmarried	67.8 (63.7-71.5)	76.4 (73.6-79.0)	61.2 (56.4-65.9)	78.9 (76.2-81.4)
Married	32.2 (28.5-36.3)	23.6 (21.0-26.4)	38.8 (34.1-43.6)	21.1 (18.6-23.8)
p-value	<0.001	<0.001	<0.001	<0.001
Occupation				
Unemployed	6.7 (5.5-8.2)	8.3 (7.3-9.5)	13.0 (11.1-15.3)	16.1 (14.7-17.7)
Service	31.8 (29.5-34.1)	38.6 (36.8-40.4)	55.8 (52.3-59.1)	55.7 (53.2-58.0)
Agri/other	61.5 (59.1-63.9)	53.1 (51.0-55.1)	31.2 (27.7-34.9)	28.2 (25.9-30.7)
p-value	<0.001	<0.001	<0.001	<0.001
Newspaper				
Never	58.0 (55.6-60.4)	47.6 (45.6-49.7)	45.3 (42.2-48.5)	49.4 (46.9-51.9)
< once a week	19.6 (17.8-21.6)	18.5 (17.1-20.0)	31.4 (28.6-34.3)	27.5 (25.7-29.4)
At least once a week	22.4 (20.5-24.5)	33.7 (32.0-35.4)	23.2 (20.5-26.2)	23.1 (21.2-25.2)
p-value	<0.001	0.184	<0.001	<0.001
Radio				
Never	21.7 (19.8-23.8)	19.2 (17.7-20.8)	23.8 (21.4-26.4)	25.9 (24.1-27.7)
< once a week	15.5 (14.0-17.3)	13.9 (12.7-15.2)	25.7 (23.3-28.3)	23.5 (21.9-25.2)
At least once a week	62.7 (60.5-64.9)	67.3 (65.8-68.7)	50.5 (47.4-53.6)	50.6 (48.3-52.9)
p-value	<0.001	1.171	0.037	0.109

Table 1. Continued

	Zambia (n= 14,773)		Zimbabwe (n= 8,396)	
	Smoking (%) 19.9 (19.0-20.9)	*Drinking* (%) 37.6 (36.4-38.9)	*Smoking* (%) 18.4 (17.4-19.5)	*Drinking* (%) 50.5 (48.9-52.1)
TV				
Never	51.7 (49.0-54.4)	41.8 (39.6-44.1)	51.1 (47.7-54.4)	42.5 (39.9-45.2)
< once a week	16.6 (14.9-18.5)	14.2 (12.9-15.7)	22.6 (20.3-25.0)	22.0 (20.4-23.7)
At least once a week	31.7 (29.3-34.3)	45.5 (43.6-47.5)	26.4 (23.4-29.5)	35.4 (32.8-38.2)
p-value	<0.001	<0.001	<0.001	<0.001

N.B: Ranges in parenthesis represent 95%CIs.

3. Data analysis

All analyses were performed using STATA 14. The data sets for two countries were checked for potential outliers and missing values, and then merged for analysis. Due to the clustered nature of the data, we used complex sampling method to by taking into consideration sampling strata, weight and primary sampling units [20]. Frequencies table were created to described basic socio-demographic characteristics as well as the prevalence of alcohol and tobacco use of the sample population. Frequency tables were accompanied by χ^2 bivariate tests in order to assess the statistical significance between drinking and smoking status with the explanatory variables. Regional prevalence of alcohol and tobacco use were presented by dot charts. The variables which were significant at p < 0.25 were selected for the multivariate analysis. Finally, multivariate regression was performed to calculate the odds ratios of the associations with smoking, and drinking. Four Three separate regression models were run (two outcomes variables * two countries) and the results were presented as forest plots. A 2-tailed p value of <0.05 was considered statistically significant for all associations.

4. Ethical consideration

All participants gave informed consent prior to taking part in the survey. DHS surveys are approved by the ICF (Inner City Fund) International Institutional Review Board, who is responsible for reviewing the procedures and questionnaires for standard DHS surveys [21].

RESULTS

1. Descriptive statistics

In total 23,169 men aged 15-54 years were included in the study. Sociodemographic profile of the sample population was presented in Table 1. The prevalence of tobacco and alcohol use were respectively 19.9% (19.0-20.9) in 37.6% (36.4-38.9) in Zambia and 18.4% (17.4-19.5) and 50.5% (48.9-52.1) in Zimbabwe. In both of the countries, nearly half the tobacco users were within the age range of 25 and 39 years. Men aged 25-39 years also represented 59% of the alcohol users in Zimbabwe. In general, the prevalence rates were higher among those located in rural areas, had secondary/higher level education, followers of Christianity, from richer-richest households, unmarried, employed in agriculture, never read newspaper, listens to radio at least once a week, and never watches TV.

2. Regional disparity in the prevalence of alcohol and tobacco use

Marked regional disparities were observed in the prevalence of smoking and drinking in both of the countries (Fig. 1). In Zimbabwe, the prevalence of smoking ranged from 7.9% in Bulawayo to 15.3% in Mashonaland Central, and that of drinking 7.8% in Mashonaland East to 14.2% in Harare. In Zambia on the other hand, the prevalence of smoking was as low as 6.4% in Wester region and as high as 12.7% in the North Western, and that of drinking from 6.6% in the Western region to as high as 14% in Lusaka.

3. Multivariable regression

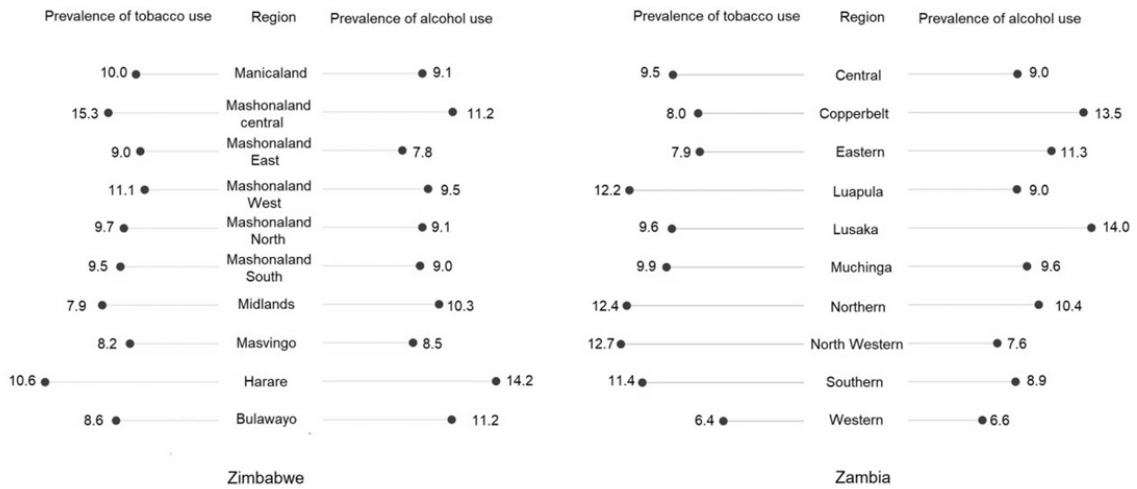As shown in Fig. 2, the odds of both smoking and drink-

Fig. 1. Regional disparity in the prevalence of alcohol and tobacco use.
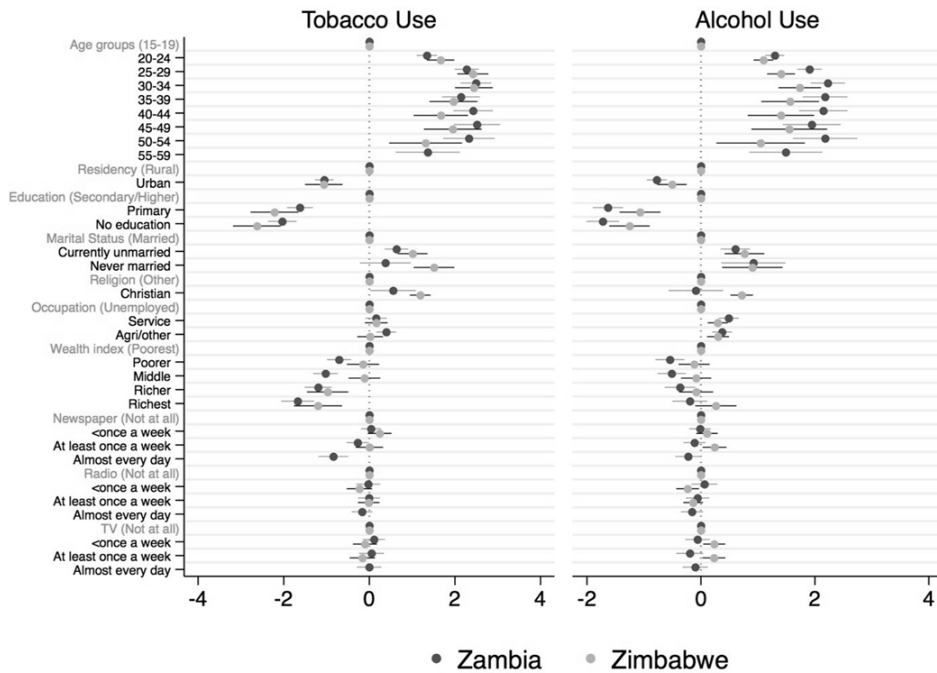

Fig. 2. Factors associated with alcohol and tobacco use among men in Zambia and Zimbabwe.

ing increased with higher age groups, not being married, having employment and Chrisitan affiliation while decreased for Urban residence, lower educational status and higher wealth status (except for alcohol use in Zimbabwe). Regarding media use, reading newspaper was associated with lower odds of tobacco use only.

DISCUSSION

Several noteworthy findings emerged from the analysis that merit particular attention. First of all, age group appeared to be an important differential of alcohol and tobacco use such that the odds of both smoking and drinking in-

creased until 30-35 years and then dropped gradually to be lowest among those in the highest age group of 50-54 years. Unlike our findings, in a comparable study on Nepalese men authors found that the odds of smoking increased with higher age groups [22]. This indicates an apparent lack of knowledge or capacity to abstain from smoking and drinking among younger men. Adolescent and early adult life presents numerous psychosocial challenges where the individuals have to constantly try different behavioral mechanism to adjust with the environment they live in and function. Examples abound of studies showing that young people share greater chances of adopting smoking and drinking behaviour for purposes as diverse as socialization, personal coping strategies, symbol of social prestige. The factors behind this differential worth exploring and warranting special intervention strategies targeting younger men.

Smoking and drinking showed significantly higher odds among urban men. In Zambia and Zimbabwe, similar to most countries in Africa, urbanization is occurring at a fast pace and being accompanied by a range of lifestyle and sociodemographic transformations which are important determinants of unhealthy behaviour such as smoking and drinking [23,24]. Greater job security, socioeconomic status, social smoking and drinking are common drivers of alcohol and tobacco use which needs to be taken into consideration for designing anti-tobacco programmes in urban settings. As further shown by the results, higher educational status and service sector jobs were associated with higher odds of smoking and drinking. These findings support the positive role of affordability and higher socioeconomic status (characteristics of urban residence) on smoking and drinking behaviour, which needs to be addressed by contextually tailored policies e.g. banning work-place smoking and offering special occupational benefits among those abstaining from these behaviours.

Another notable finding was that the prevalence of smoking was relatively higher among men in the lower wealth quintiles, while that of alcohol drinking was higher among those in the higher-highest wealth quintiles. Wealth status, together with education and employment constitute the main components of socioeconomic status, and our overall findings suggest that men with higher socioeconomic status are at higher odds of using alcohol and tobacco [19]. In the multivariate regression, odds of smoking also increased progressively with higher wealth status, however, that of drinking showed a reverse trend in both countries. Although there are no data to explain this finding, the potential reasons could be the comparatively cheaper availability of tobacco e.g. roll-your-own (RYO) tobacco in Zambia [25], that makes it more popular among low-income population. This finding indicates the presence of a socioeconomic gradient in the already established positive relationship between smoking and alcohol drinking. Thus, the role of wealth disparity in tobacco and alcohol consumption behaviour is a particularly interesting one and warrant more detailed investigation.

Besides the main findings, our study has several important limitations to report. The data were self-reported which incurs the chances of recall and reporting bias. The surveys were cross-sectional, and therefore the associations cannot be interpreted as causations.

CONCLUSION

The prevalence of alcohol and tobacco use among men is remarkably high especially among those in the age group of 25-29 years and with higher socioeconomic status. These findings indicate the importance of segmenting the target population so as to implement age- and socioeconomic context specific alcohol and tobacco control programs. In conclusion, the present study gives an overview of alcohol and tobacco use among men in Zambia and Zimbabwe and highlights that young men are at higher odds of adopting smoking and drinking behaviour, a trend that has important implications for future research and policy in the tobacco sector in these countries.

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CONFLICT OF INTERESTS

None to declare.

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