EPIDEMIOLOGY OF ALCOHOL USE AND ALCOHOL USE DISORDERS AMONG YOUNG PEOPLE IN NORTHERN TANZANIA

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Introduction

There is some evidence that alcohol use begins during adolescence in some societies, and so there is a need to determine to what extent it is a problem in East Africa and specifically Tanzania. A systematic review and meta analysis of prevalence of alcohol use in young people in East Africa showed there is high prevalence of reported alcohol use among diverse groups of young people. Only few studies had used standardized alcohol screening questionnaires [1].

We aimed to:

1. understand the epidemiology of alcohol use and alcohol use disorders (AUD) among young people (15-24 years) in Tanzania

2. identify factors that are associated with alcohol use and AUD

3. identify groups that are particularly at risk for alcohol use and AUD

4. assess the validity of self-reported alcohol use through AUDIT and the time-line-follow-back calendar methods among young people in Tanzania using the blood alcohol biomarker PEth

Methods

1. A cross sectional survey (N=1954) was conducted among young people (15-24 years) in secondary schools, colleges, employed in local industries and casual labourers in Kilimanjaro and Mwanza regions, N-Tanzania (Fig. 1).

   Study participants were randomly selected for students and recruited all eligible employed young people and casual labourers. Face to face interviews were conducted using standardized questionnaires which included the Alcohol Use Disorder Identification Test (AUDIT)[2] and applied the Time Line Follow Back calendar (TLFB) method [3]. A pictorial display and lists of types of drinks were used to document reported alcohol use in terms of standard units consumed (Fig 2).

2. We performed a validation study (N=202) with college students and casual labourers in Mwanza to assess the validity of self-reported alcohol use against the blood biomarker phosphatidylethanol (PEth)[4].

   This study was restricted to current alcohol users aged 15-24 years. Participants were interviewed using AUDIT and TLFB. Venous whole blood was collected to conduct the PEth assay. This assay uses liquid chromatography-tandem mass spectrometry.
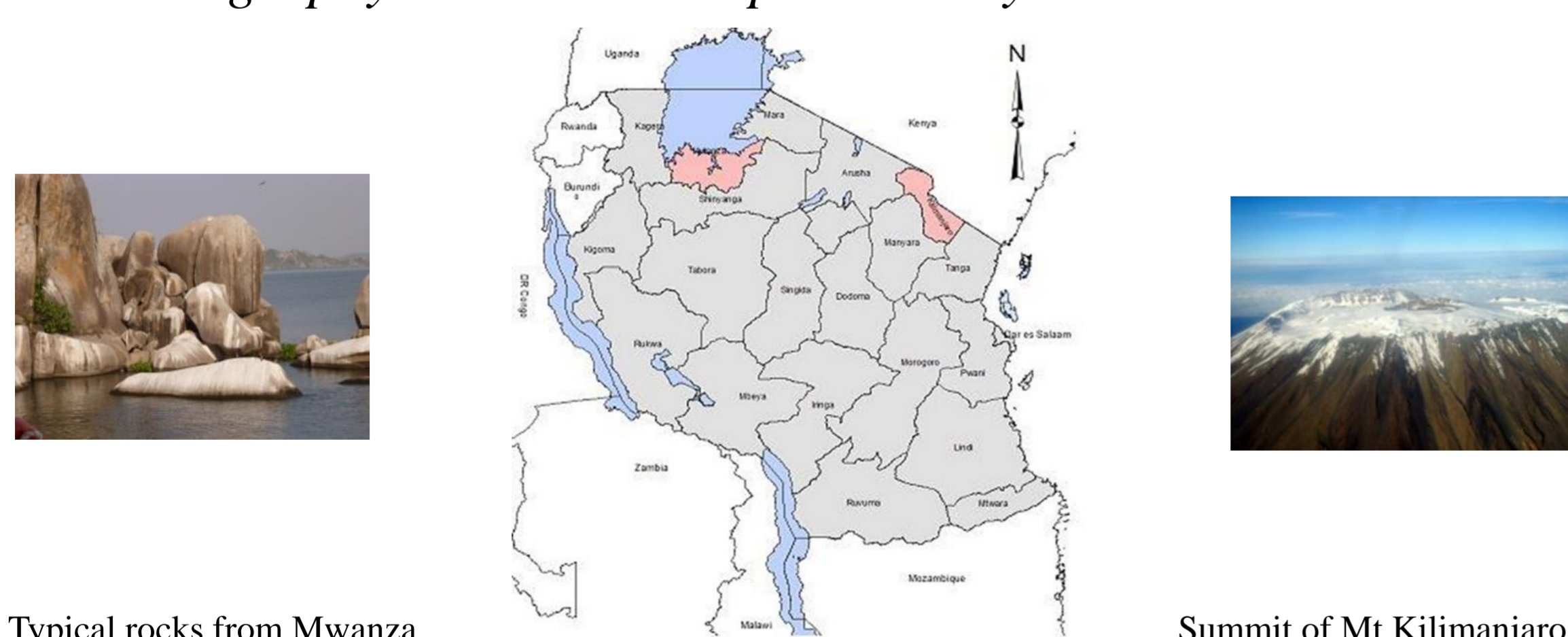

Typical rocks from Mwanza   Summit of Mt Kilimanjaro

Figure 1: The study areas - Mwanza and Kilimanjaro Regions / Tanzania

Acknowledgements

References
[1] Francis, J et al. Tropical Medicine & International Health 2014; 19: 476–488; [2] Babor T et World Health Organization 2001, 2nd edition ; [3] Sobell L et al. Addict Behav. 1986; 11:149-161; [4] Viel, G. et al. Int.J.Mol.Sci 2012; 13;14788–14812; [5] Francis J et al. PLoS One 2015; e0140041; [6] Francis J et al. Drug Alc Depend 2015; 156:289-296;

Results

Survey

A total of 1954 young people were surveyed between July 2012 and June 2013 [5].

1. The prevalence of reported alcohol use was higher among males (20-45% for current use) than females (12-47% for current use).

2. Prevalence of ever-use of alcohol was highest amongst male college students (70.4%, 95%CI: 54.8–74.2) and male casual labourers (61.0%, 95% CI: 51.4–67.7).

3. AUD was highly prevalent among male college students (27.5%, 95% CI: 13.6–30.9%); and common among male casual labourers (13.7%, 95%CI: 8.0–18.3%) and male secondary students (10.6%, 95%CI: 3.8–16.6%).

4. Alcohol use was significantly associated with being in a relationship, greater disposable income (> median income for the group), and a higher number of sexual partners ($\geq$ 2).

5. Being a resident of Kilimanjaro Region was associated with reported alcohol use among secondary students (AOR = 4.36, 95%CI: 2.71–9.21), employees in local industry (AOR = 5.28, 95%CI: 2.62–11.61) and casual labourers (AOR = 3.53, 95% CI: 1.73–5.58), compared to residents of Mwanza Region.

6. Young people felt that they were frequently exposed to alcohol adverts and that they did not find any barriers when trying to obtain alcoholic drinks.
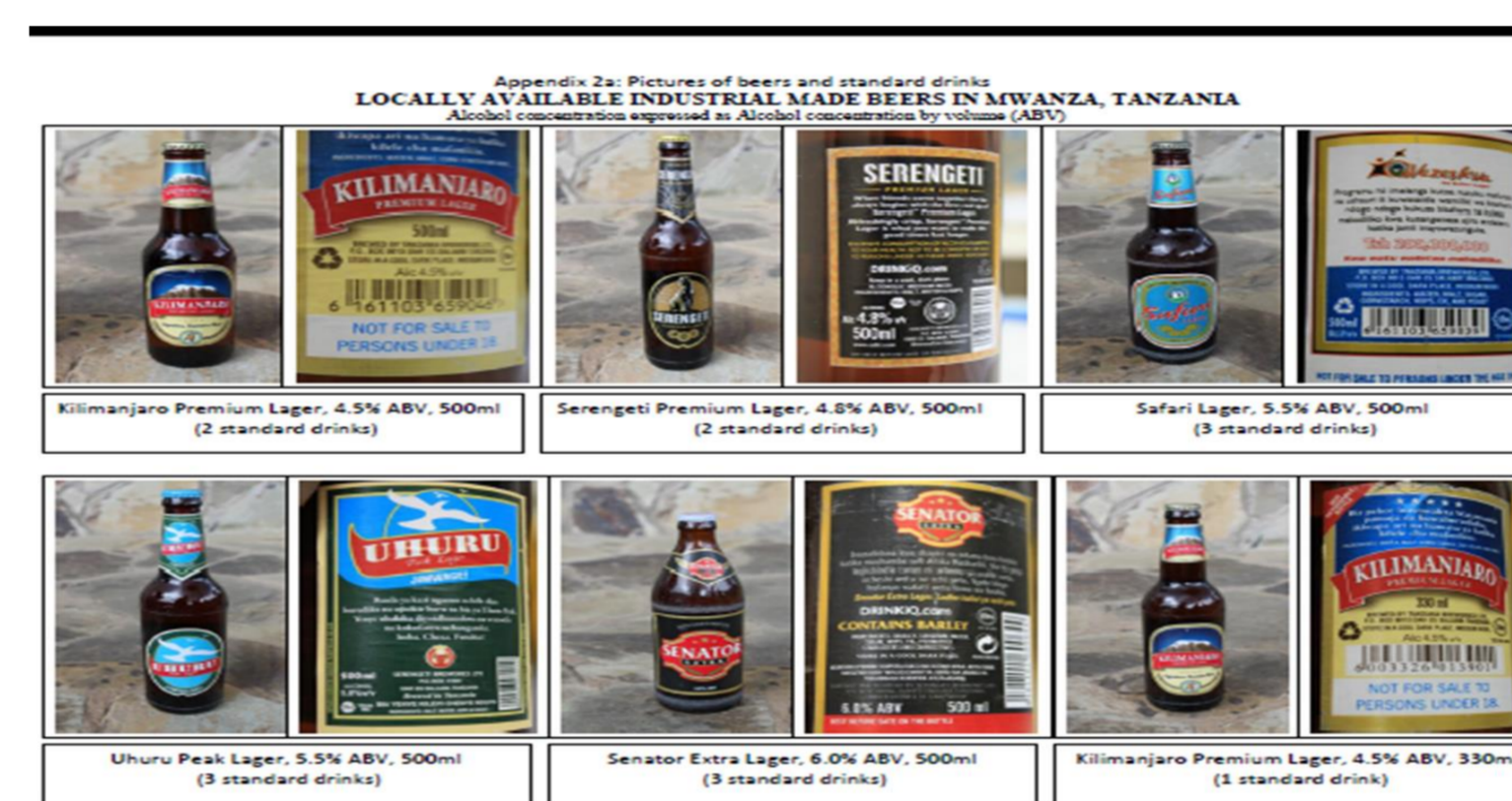

Figure 2: Pictorial display of alcohol drink(beers) with the standard units

Validation of the self reported alcohol use

In March and April 2014, 202 young people:103 male casual labourers, 58 male college students and 41 female college students were recruited into the study [6].

1. There were significant positive correlations between reported total alcohol intake and PEth concentration in males (Spearman correlation (rs)=0.65 among college students and rs=0.57 among casual labourers; p<0.001) (Fig. 3).
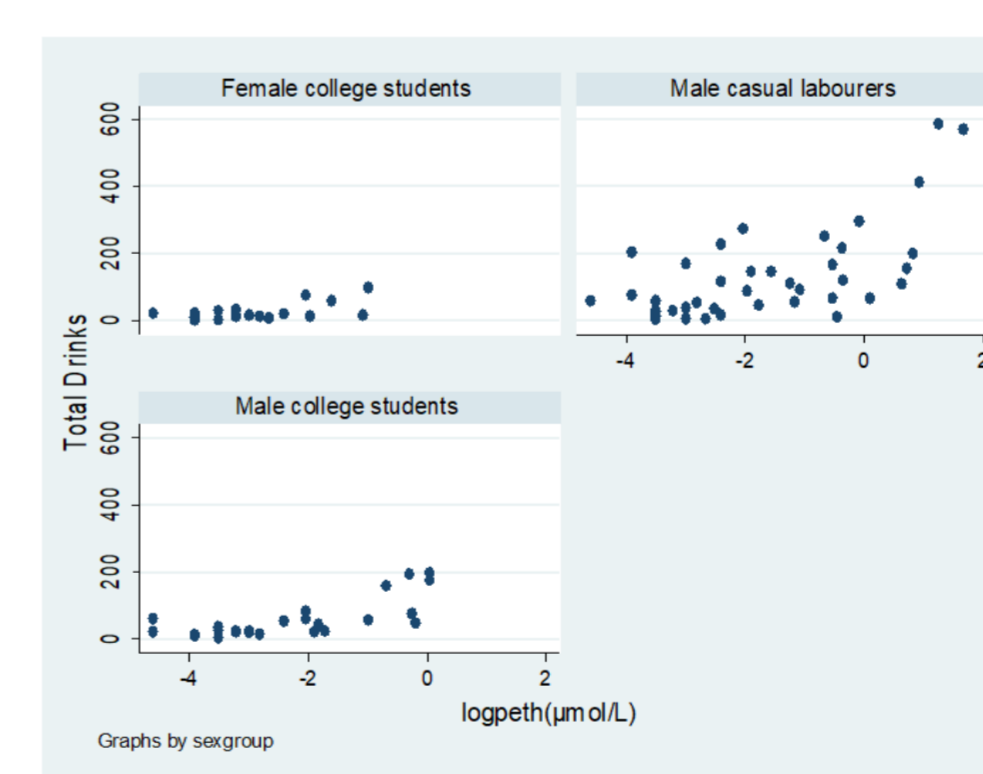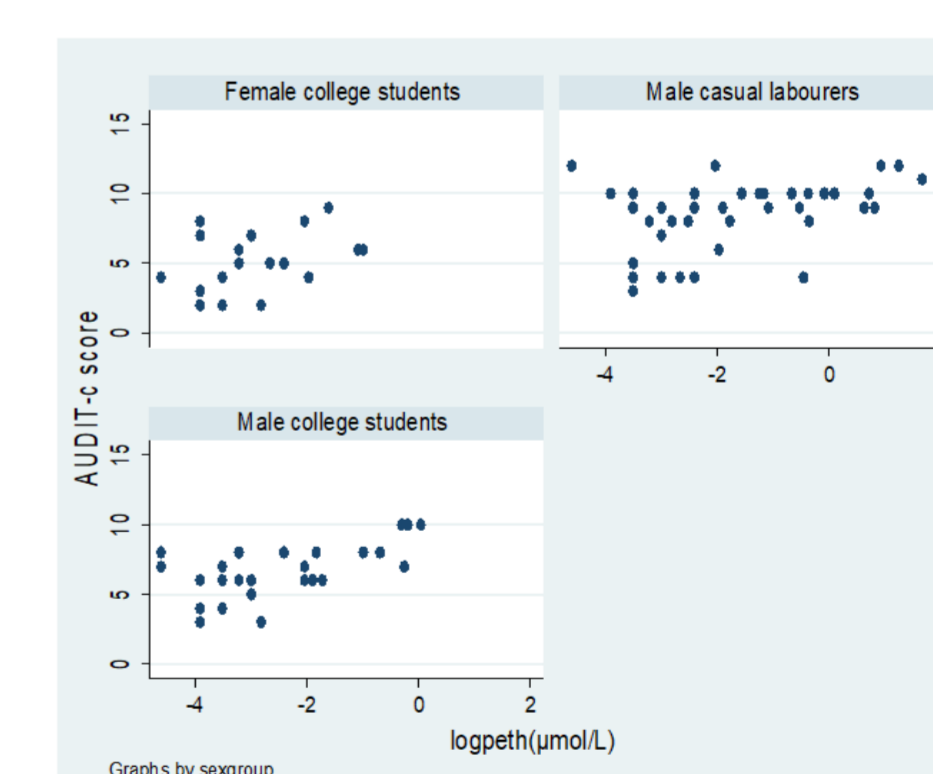

Figure 3:Total drinks vs PEth

Figure 4:AUDIT-C scores vs PEth

2. AUDIT-C scores in males correlated positively with PEth concentration (p<0.001) (Fig 4).

3. Self-reported alcohol use in the past month was a sensitive marker of having a positive PEth result (overall sensitivity 89%, 95%CI 81-94%), and was similar in all groups.

Discussion and conclusion

1. Alcohol use is a significant problem among young people in northern Tanzania

2. The Timeline Follow Back calendar (TLFB) and Alcohol Use Disorders Identification Test (AUDIT) are sensitive measures of alcohol use among young people in northern Tanzania

3. Reported alcohol use was higher in Kilimanjaro than in Mwanza region, possibly due to local cultural beliefs that encourage alcohol use

4. The Most affected groups are college students and casual labourers.

5. These two groups need urgent interventions addressing both individual and societal risks associated with hazardous/harmful alcohol use.

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