

Epidemiology of alcohol use among young people in Northern Tanzania



On behalf of NIMR/MITU STRIVE team

Background

- ☼ Globally there are about 2 billion alcohol users, 76 million with alcohol use problems (WHO 2004 report)
- ☼ In Tanzania, 5L of pure alcohol per capita consumed annually, plus approximately 2L unrecorded use (WHO 2004 report)
- ☼ Alcohol use accounted for 4.9 million deaths and 5.5% (5.0-5.9%) of global DALYs in 2010 (Lim et al 2012)

Alcohol and HIV Infection

- Alcohol associated with increased risk of HIV infection (Fisher et al 2007, Baliunas et al 2010, Woolf-King et al 2013)
- Excessive alcohol use is associated with progression of HIV-associated disease symptoms (Rehm et al 2009), lower CD4+ T-cell counts and higher viral load (Neuman et al 2012, Azar et al 2010)
 - Alcohol users are 50%-60% less likely to be adherent to ART than non-users (Hendershot et al 2009)
 - The adverse effect of alcohol on ART adherence increases as the amount of alcohol consumed increases (Chander et al 2006, Azar et al 2010, Grodensky et al 2012)

Alcohol Marketing



Alcohol Marketing



Alcohol Availability



Study objectives

- ❁ To determine the **prevalence of alcohol use and alcohol use disorders** among four groups of young people
- ❁ To describe **perceptions, attitudes and behaviours** associated with alcohol use and abuse
- ❁ To determine **factors associated with initiation and persistence** of alcohol use in this population
- ❁ To examine the **relationship between alcohol use and risky sexual behaviours** in this population

Main outcomes

Alcohol use

- Ever use
- Use in the last 12 months
- Use in the last 2 months
- Use in the last 30 days

Pattern of use

- Frequency
- Amount of alcohol used (standard drinks)

Unfavourable alcohol use

- hazardous and harmful use and dependence

Definitions

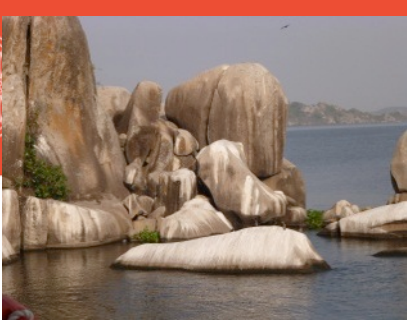
- 🌀 Alcohol Use Disorders Identification Test (**AUDIT**)
 - 10 question alcohol screening tool
 - Minimum score 0 and maximum score 40
 - Scores of 8-15 (**risky or hazardous drinking**)
 - Scores of 16-19 (**high-risk or harmful drinking**)
 - Scores ≥ 20 (**possible alcohol dependence**)

Definitions

Alcohol abuse and dependence (AUD)

=> Based on Diagnostic and Statistical Manual of Mental disorders (DSM IV)

- **4 questions on alcohol abuse** (score of 1 indicates abuse)
- **7 questions on dependence** (score of 3 indicates dependence)



Study areas



- ☉ **Mwanza and Kilimanjaro regions**
- ☉ **A variety of local industries, plantations and colleges**
- ☉ **Long term research collaborations with NIMR/ MITU**



Study populations

- 🌀 **Young people 15-24 years** in the following groups:
 - secondary school students
 - college and university students
 - employed in the local industries
 - Unemployed casual labour (e.g. garages, construction sites)

Study Design

Cross-sectional study

- Overall sample size 2000

 - ⇒80% study power to estimate an odds ratio of 2 or more, if the proportion of the outcome among those unexposed to the risk factors is 15% and that of exposed is 26%

Aimed to sample 500 in each of the four groups of young people, half from each region

Study Design

Multi stage sampling

- Urban and rural districts
- Schools, colleges, industries and garages/
constructions sites
- Individuals within selected study sites

Data collection tools

- ⑧ **Standardised questionnaire** to collect information about demographics, alcohol use, factors possibly associated with alcohol use
 - AUDIT questions (Saunders et al, 1993)
 - Pictorial display and lists of types of drinks
- ⑧ **Timeline Follow-back (TLFB) method** (Sobell et al, 1988) for young people reporting using alcohol in the past 60 days
- ⑧ Additional information on the **amount of alcohol and behaviours** related to HIV

Appendix 2a: Pictures of beers and standard drinks
LOCALLY AVAILABLE INDUSTRIAL MADE BEERS IN MWANZA, TANZANIA
 Alcohol concentration expressed as Alcohol concentration by volume (ABV)

					
<p>Kilimanjaro Premium Lager, 4.5% ABV, 500ml (2 standard drinks)</p>	<p>Serengeti Premium Lager, 4.8% ABV, 500ml (2 standard drinks)</p>	<p>Safari Lager, 5.5% ABV, 500ml (3 standard drinks)</p>			
					
<p>Uhuru Peak Lager, 5.5% ABV, 500ml (3 standard drinks)</p>	<p>Senator Extra Lager, 6.0% ABV, 500ml (3 standard drinks)</p>	<p>Kilimanjaro Premium Lager, 4.5% ABV, 330ml (1 standard drink)</p>			

Progress so far

- ⊗ We have completed fieldwork in Mwanza region
- ⊗ Enrolled 960 young people
- ⊗ Analysis of the data is ongoing
- ⊗ We present preliminary findings in the following slides

		Male (N=648)	Female (N=312)
Geographical location	Rural	294(45.4)	153(49.0)
	Urban	354(54.6)	159(51.0)
Age categories (years)	15-17	82(12.7)	79(25.3)
	18-20	189(29.2)	87(27.9)
	21-24	377(58.2)	146(46.8)
Education	Primary school and less	338(52.2)	109(34.9)
	Above secondary school	310(47.8)	203(65.1)
Marital status	Single	395(61.0)	155(49.9)
	Single in a relationship	221(34.1)	139(44.6)
	Married	30(4.6)	16(5.1)
	Separated/widowed	2(0.3)	2(0.6)

Alcohol use

	Males (N=648)	Females (N=312)
Reported alcohol use*		
Ever used alcohol	289 (44.6%)	87 (27.9%)
Used alcohol in the past 12 months	132 (20.4%)	45 (14.4%)
Used alcohol in the past 2 months	73 (11.3%)	23 (7.4%)
Used alcohol in the past 30 days	59 (9.1%)	18 (5.8%)
Age first used alcohol (years)		
≤ 10	27 (9.5%)	6 (7.1%)
11-17	115 (40.4%)	38 (44.7%)
18-24	143 (50.2%)	41 (48.2%)

***Use highest among college and university students and those in unstable employment**

Alcohol use

	Males (N=648)	Females (N=312)
First drinking event		
Holiday	102 (35.3%)	19 (21.8%)
Wedding ceremony	27 (9.3%)	14 (16.1%)
School party/graduation	29 (10.0%)	3 (3.5%)
At party with friends	14 (4.8%)	12 (13.8%)
Other family celebration	19 (6.6%)	9 (10.3%)
Other event	98 (33.9%)	30 (34.5%)
Type of alcohol usually drunk in the past year		
Bottled beer	87 (65.9%)	23 (51.1%)
Wine	2 (1.5%)	11 (24.4%)
Spirit/liquor	15 (11.4%)	1 (2.2%)
Local beer/spirit/liquor	2 (1.5%)	0 (0.0%)
Other	0 (0.0%)	6 (13.3%)
More than one type	25 (18.9%)	4 (8.9%)

Alcohol use Disorders

	Males (N=648)	Females (N=312)
Alcohol use disorders based on AUDIT among ever users		
Low risk drinking	225 (77.9%)	79 (90.8%)
Hazardous drinking	50 (17.3%)	7 (8.1%)
Harmful drinking	8 (2.8%)	1 (1.1%)
Possible dependence	6 (2.1%)	0 (0.0%)

Alcohol advertisement and availability

	Males (N=648)	Females (N=312)
Alcohol advertisement		
Seen alcohol advertisement daily/almost daily last month	441 (68.1%)	171 (54.8%)
Seen movie stars/actors drinking alcohol most of the time/always	484 (74.7%)	233 (74.7%)
Seen alcohol being advertised in community occasions most of the time/always	358 (55.2%)	138 (44.2%)
Is it possible to get alcohol in your community?		
Impossible	8 (1.2%)	5 (1.6%)
Very difficult	12 (1.9%)	3 (1.0%)
Fairly difficult	8 (1.2%)	12 (3.9%)
Fairly easy	46 (7.1%)	62 (19.9%)
Very easy	574 (88.6%)	228 (73.1%)
I don't know	0 (0.0%)	2 (0.6%)

Key findings - 1

- ⊗ Substantial proportion of young people have ever used alcohol
 - Males more likely to have used alcohol than females
 - About 30-50% of ever users reported using it during the past 12 months

- ⊗ About 50% of young people initiate alcohol use before 18 years of age

Key findings - 2

- ⑧ First drinking experience was associated with a number of social events (weddings, party etc)
- ⑧ Most young people reported drinking bottled modern alcoholic drinks
 - Bottled beer was the most common alcoholic drink reported
 - Local alcoholic drinks were not common

Key findings - 3

- ⊗ Alcohol use disorders relatively common in males than females
 - Hazardous/harmful drinking in 20.1% of males and 9.2% in females
- ⊗ Most young people has been exposed to alcohol advertisements
- ⊗ Alcohol reported to be easily available in the communities where the survey was conducted

Future plans

- ☉ To continue with the fieldwork in Kilimanjaro region from April 2013 to end of May 2013
- ☉ To conduct a study to validate alcohol measurements/ screening tools

- ⊗ DFID UK through STRIVE consortium
- ⊗ STRIVE team in London
- ⊗ STRIVE team at NIMR/MITU Mwanza
- ⊗ Young people who participated in the initial survey

Many thanks

DESCRIPTION OF FACTORS FOR INITIATION AND TYPES OF ALCOHOL BEVERAGES

		Secondary school students		College and university students		Employed in local industries		Unstable employment
		Male	Female	Male	Female	Male	Female	
First drink occasion	Holiday	11(32.4)	5(27.8)	17(21.5)	8(16.0)	22(39.3)	6(42.9)	51(41.8)
	Wedding ceremony	7(20.6)	0(0)	7(8.9)	11(22.0)	6(10.7)	2(14.3)	8(6.6)
	School party/graduation	3(8.8)	1(5.6)	20(25.3)	2(4.0)	2(3.6)	0(0)	4(3.3)
	At a party with friends	1(2.9)	3(16.7)	5(6.3)	4(8.0)	2(3.6)	3(21.4)	8(6.6)
	Other family celebration	3(8.8)	2(11.1)	6(7.6)	6(12.0)	4(7.1)	1(7.1)	6(4.9)
	Other	9(26.5)	7(38.9)	24(30.4)	19(38.0)	20(35.7)	2(14.3)	45(36.9)
Alcoholic drink at first occasion	Bottled beer	20(58.8)	10(55.6)	58(73.4)	37(74.0)	37(66.1)	12(85.7)	86(70.5)
	Wine	2(5.9)	5(27.8)	4(5.1)	6(12.0)	0(0)	1(7.1)	0(0)
	Spirit/liquor	5(14.7)	1(5.6)	10(12.7)	2(4.0)	9(16.1)	0(0)	15(12.3)
	Local beer/spirit/liquor other	7(20.6)	1(5.6)	5(6.3)	3(6.0)	10(17.9)	1(7.14)	17(13.9)
	More than one type	0(0)	1(5.6)	0(0)	0(0)	0(0)	0(0)	0(0)
	Other	0(0)	0(0)	2(2.5)	2(4.0)	0(0)	0(0)	4(3.3)
Reasons for the initiation of alcohol use	Wanted to try	10(29.4)	12(66.7)	35(44.3)	23(46.0)	21(37.5)	4(28.6)	43(35.3)
	Friends	1(2.9)	0(0)	11(13.9)	1(2.0)	14(25)	0(0)	26(21.3)
	Parents and relatives	4(11.8)	0(0)	2(2.5)	5(10.0)	8(14.3)	0(0)	5(4.1)
	Partner	0(0)	0(0)	0(0)	0(0)	1(1.8)	0(0)	1(0.8)
	Other	0(0)	0(0)	5(6.3)	6(12.0)	0(0)	0(0)	4(3.3)
	More than one reason	19(55.9)	6(33.3)	26(32.9)	15(30.0)	12(21.4)	10(71.4)	43(35.3)
Reasons for not ever drinking	My parents	83(87.4)	94(86.3)	35(70.0)	57(70.4)	63(62.4)	23(71.9)	82(71.9)
	Relatives	55(57.9)	72(66.1)	26(52.0)	30(37.0)	53(52.5)	11(34.4)	67(58.8)
	My religion	67(70.5)	69(63.3)	35(70.0)	51(63.0)	59(58.4)	20(62.5)	75(65.8)
	My friends	42(44.2)	56(51.3)	11(22.0)	23(28.4)	44(43.6)	14(43.8)	44(38.6)
	Afraid of side effects	84(88.4)	100(91.74)	44(88.0)	71(87.7)	93(92.1)	30(93.8)	102(89.5)

DESCRIPTION OF ALCOHOL USE AND ALCOHOL USE DISORDERS AMONG THE FOUR GROUPS OF YOUNG PEOPLE

		Secondary school students		College and university students		Employed in local industries		Unstable employment
		Male	Female	Male	Female	Male	Female	
Sample size(n)		129	128	129	131	159	46	238
Age first alcohol use (years)	less or equal to 10	8(23.5)	2(11.1)	5(9.6)	2(5.9)	5(8.9)	1(7.1)	7(5.7)
	11 to 17	18(52.9)	16(88.9)	22(42.3)	13(38.2)	17(30.4)	4(28.6)	52(42.6)
	18-24	8(23.5)	0(0)	25(48.1)	19(55.9)	34(60.7)	9(64.3)	63(51.6)
Prevalence of alcohol use among everyone	ever-use	34(26.4)	19(14.8)	79(61.2)	50(38.2)	56(35.2)	14(30.4)	124(52.1)
	Use in the last 12 months	14(10.9)	10(7.8)	50(63.3)	28(56.0)	14(8.8)	5(10.9)	56(23.5)
	Use in the last 2 months	3(2.3)	1(0.8)	34(43.0)	20(40.0)	8(5)	1(2.2)	29(12.2)
	Use in the last 30 days	2(1.6)	1(0.8)	26(32.9)	16(32.0)	8(5)	0(0)	24(10.1)
Prevalence of alcohol use among the ever used alcohol	Use in the last 12 months	14(41.2)	10(52.6)	33(61.1)	19(55.9)	14(25)	5(35.7)	56(45.2)
	Use in the last 2 months	3(8.8)	1(5.3)	26(48.2)	14(41.2)	8(14.3)	1(7.1)	29(23.4)
	Use in the last 30 days	2(5.9)	1(5.3)	18(33.3)	11(32.4)	8(14.3)	0(0)	24(19.4)
Alcohol use disorders as classified by AUDIT among everyone	Non-hazardous drinking	129(100)	127(99.2)	100(77.5)	124(94.6)	153(96.2)	46(100)	209(87.8)
	Hazardous drinking	0(0)	1(0.7)	22(17.1)	6(4.6)	6(3.8)	0(0)	22(9.2)
	Harmful drinking	0(0)	0(0)	4(3.1)	1(1)	0(0)	0(0)	4(1.7)
	Problematic drinking	0(0)	0(0)	3(2.3)	0(0)	0(0)	0(0)	3(1.3)
Alcohol use disorders as classified by AUDIT among ever drinkers	Non-hazardous drinking	34(100)	18(94.7)	50(63.3)	43(86.0)	50(89.3)	14(100)	95(76.6)
	Hazardous drinking	0(0)	1(5.6)	22(27.9)	6(12.0)	6(10.7)	0(0)	22(17.7)
	Harmful drinking	0(0)	0(0)	4(5.1)	1(2.0)	0(0)	0(0)	4(3.2)
	Problematic drinking	0(0)	0(0)	3(3.8)	0(0)	0(0)	0(0)	3(2.4)
AUDIT scores classified as binary outcome	Non-hazardous use	34(100)	18(94.7)	50(63.3)	43(86.0)	50(89.3)	14(100)	95(76.6)
	Hazardous use	0(0)	1(5.3)	29(36.7)	7(14.0)	6(10.7)	0(0)	29(23.4)
Alcohol abuse and dependence by DSM IV for everyone	Abuse	0(0)	0(0)	6(5.0)	2(1.6)	1(0.6)	0(0)	5(2.2)
	Dependence	0(0)	1(0.8)	8(6.2)	4(3.1)	1(0.6)	0(0)	7(2.9)
Alcohol abuse and dependence by DSM IV for those ever used alcohol	Abuse	0(0)	0(0)	6(8.5)	2(4.4)	1(1.8)	0(0)	5(4.3)
	Dependence	0(0)	1(5.3)	8(10.1)	4(8.0)	1(1.8)	0(0)	7(5.7)

Results-4

DESCRIPTION OF STRUCTURAL FACTORS FOR ALCOHOL USE

		Secondary school students		College and university students		Employed in local industries		Unstable employment
		Male	Female	Male	Female	Male	Female	only Male
Alcohol advertisement seen in the last month	Never	9(7)	30(23.4)	5(3.9)	3(2.3)	6(3.8)	12(26.1)	5(2.1)
	Rarely	29(22.5)	46(35.9)	18(14)	38(29)	55(34.6)	9(19.6)	60(25.2)
	Sometimes	6(4.7)	1(0.8)	8(6.2)	2(1.5)	0(0)	0(0)	6(2.5)
	Almost daily	35(27.1)	37(28.9)	41(31.8)	54(41.2)	48(30.2)	4(8.7)	76(31.9)
	Daily	50(38.8)	14(10.9)	57(44.2)	34(26.0)	50(31.5)	21(45.7)	91(38.2)
Seen movie-cinema stars/actors drinking alcohol	Do not watch television	7(5.4)	9(7)	1(1.0)	1(1.0)	9(5.7)	12(26.1)	12(5)
	Never	3(2.3)	4(3.1)	1(1.0)	3(2.3)	4(2.5)	2(4.4)	3(1.3)
	Rarely	17(13.2)	23(18)	11(8.5)	14(10.7)	44(27.7)	7(15.2)	48(20.2)
	Sometimes	0(0)	3(2.3)	1(1.0)	0(0)	1(0.6)	0(0)	3(1.3)
	Most of the time	98(76)	88(68.8)	107(83.0)	106(80.9)	99(62.3)	22(47.8)	167(70.2)
	Always	4(3.1)	1(0.8)	8(6.2)	7(5.3)	2(1.3)	3(6.5)	5(2.1)
Availability of alcohol	Impossible	8(6.2)	5(3.9)	0(0)	0(0)	0(0)	0(0)	0(0)
	Very difficult	8(6.2)	3(2.3)	0(0)	0(0)	3(1.9)	0(0)	1(0.4)
	Fairly difficult	0(0)	8(6.3)	1(1.0)	2(1.5)	2(1.3)	2(4.4)	5(2.1)
	Fairly easy	10(7.8)	39(30.5)	6(4.7)	17(13.0)	18(11.3)	5(10.9)	13(5.5)
	Very easy	103(79.8)	73(57)	122(94.6)	111(84.7)	136(85.5)	38(82.6)	219(92)
	I do not know	0(0)	0(0)	0(0)	0(0)	0(0)	1(2.2)	0(0)
Who do they drink with	Friends	9(7)	7(5.5)	45(34.9)	24(18.2)	13(8.2)	3(6.5)	42(17.7)
	Family	3(2.3)	3(2.3)	0(0)	2(1.5)	0(0)	2(4.4)	2(0.8)
	Person just met	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0.4)
	Alone	2(1.6)	0(0)	4(3.1)	2(1.5)	1(0.6)	0(0)	9(3.8)
	Not applicable	115(89.2)	118(92.2)	80(62.0)	103(78.6)	145(91.2)	41(89.1)	184(77.3)