Problem drinking among patients attending primary healthcare units in Kampala, Uganda

G Kullgren[1] , S Alibusa[2], H Birabwa-Oketcho[2]
[1]Department of Clinical Sciences, Umeå University, Umeå, Sweden,
[2]Butabika National Referral Mental Hospital, Kampala, Uganda

Abstract

Objective: Previous studies have shown that a large a number of primary health care patients have alcohol related problems and very few are detected and treated. Few studies have been done in developing countries on this topic. This study sought to determine the prevalence and detection of alcohol related problems in a Primary Health Care setting (PHC). in Kampala Uganda. **Method:** 768 consecutive PHC patients in two PHC centers in Kampala, Uganda, were screened in a two stage procedure. After being asked if they drink alcohol they were interviewed by means of the CAGE questionnaire and a quantity/frequency questionnaire. Those who scored positive on the CAGE were further diagnosed for alcohol dependence using the DSM- IV diagnostic criteria. **Results:** Of all patients, 17.4% scored above cut-off on the CAGE, 28.5% had a high risk drinking pattern and 9.5% had alcohol dependence. Among drinkers, drinking beyond safe limit was more common among men. Males and those aged between 35 to 44 years, were more likely to be CAGE positive and to be diagnosed with alcohol dependence. Only 27 out of 366 drinkers were asked about alcohol by the PHC professional. Males and high risk drinkers were more likely to be asked. **Conclusion:** Prevalence of alcohol problems was high and detection rate of alcohol related problems was low in this Ugandan setting. Training of PHC professionals in diagnosing and treating alcohol related problems is required.

Key words: Primary Health Care; Alcohol dependence; CAGE

Introduction

It is estimated that about 76.3 million people have a diagnosable alcohol use disorder world wide.[1] The global burden related to alcohol consumption both in terms of morbidity and mortality is considerable in most parts of the world. Alcohol consumption causes 3.2% of deaths (1.8 million people) and 4.0% of Disability Adjusted Life Years (DALY's).[2]

Uganda has the highest alcohol per capita consumption in the world with an alcohol consumption of 19.47 liters of pure alcohol per capita.[3] Alcohol related problems are highly correlated with a high per capita consumption and indeed, in Uganda, this rate of alcohol consumption is associated with health and social consequences including psychiatric disorders.[1,4] Previous studies conducted in the Ugandan setting have shown alcohol use to be associated with road traffic accidents, domestic violence and transmission of HIV/AIDS.[1,5,6,7]

Research evidence from the Western countries suggests that approximately 15-25% of patients presenting to primary care are likely to be hazardous or harmful drinkers.[8,9,10] In developing countries a study from Nigeria showed that more than one quarter of PHC patients have alcohol related problems.[11] In a study in Zimbabwe over 60% of PHC patients were drinking beyond safe limits.[12] Though the screening for alcohol use disorders in PHC has been recommended, this is frequently not done. Hazardous and harmful drinkers often go undetected.[13] Studies from the African setting show similar results.[11,12,14]

The success of brief interventions in reducing consumption suggests huge potential for primary care to reduce the incidence of alcohol related problems.[15,16,17,18]

No studies have been undertaken in Uganda to determine detection, magnitude of, and factors related to alcohol use in the Primary Health Care (PHC) setting. The overall objective was thus to determine the magnitude, nature and detection of problem drinking among patients attending PHC settings in Kampala, Uganda. Specific Objectives were:

1. To determine the prevalence of alcohol problems among patients attending selected Primary Health Care units in Kampala.
2. To determine the drinking pattern among patients attending

Correspondence:
Professor G Kullgren
Department of Clinical Sciences, Umeå University,
SE-901 84 Umeå; Sweden
email: Gunnar.kullgren@psychiat.umu.se

Primary Health Care units in Kampala.

3. To examine the association between socio-demographic characteristics and problem drinking among patients attending Primary Health Care.

4. To examine to what extent primary health care workers ask patients about their alcohol use and factors related to being asked.

Method
Study site
The study was conducted in two primary health care centres in Nakawa Division Kampala District. Kampala, the capital city of Uganda, has an average population of 1,212,365 people. There are ten such primary health care units in the city, which are directly under city authorities and headed by the District Director of health services. These serve mostly the low-income earners who may not afford treatment in the private centres within the city. Nearly all tribes in the country are represented, however the majority are Baganda who are indigenous of the area and most attendees are likely to speak the language. The PHC centers are health units situated within a sub-county and headed by either a clinical officer or a medical doctor. These units run general outpatients clinics for both adults and children as well as both outpatient and inpatient Maternal & Child Health (MCH) services. There is a laboratory as well as a dispensary that stocks a minimal quantity of psychiatric drugs.

The Ministry of Health policy has integrated Mental Health within the minimum health care package and only minimal psychiatric services are offered at these units. On average one thousand patients are seen per month at the health centre with slightly over one half of the patients attending the MCH clinic.

Study design and sample
This was a cross sectional descriptive study with an analytical component. The study population was all patients meeting the study criteria in two primary health care units in Kampala. All consecutive patients who gave written informed consent to participate in the study and who could speak either Luganda or English, were recruited in the study. Eligible patients who did not give informed consent or those who were physically very weak were excluded.

All consecutive patients attending the two PHC centers from August to September 2007 were asked a by a research assistant if they were willing to participate in the study. The study continued for one month but for some days there were no research assistants available. Out of all patients approached, less than 10 patients refused to participate in the study, and the remaining 768 patients were all asked if they had used alcohol during the past year. Those who responded positively (n=376) were then given an identification card and were further interviewed after having seen the PHC professional. Ten questionnaires were not complete and 366 patients remained for the further study. We chose to conduct our interview after the patients had seen the clinician but before they had their drugs in order to minimize loss of study participants. Data on the medical diagnoses and the prescriptions given by the PHC professional were collected from the patients' medical records.

Instruments and data collection
Standardized pre-coded questionnaires were used. They consisted of a socio-demographic questionnaire, the CAGE

(CAGE is an acronym formed from the italicised letters in the questionnaire i.e cut/annoyed/guilty/eye) instrument developed by Ewing to screen for problem drinking and also questions on drugs prescribed on that day.[19]

The CAGE consists of four questions, with a total of two or more positive answers indicative of an alcohol use disorder. Its sensitivity ranges from 43% to 94% and specificity from 70% to 97% in detecting alcohol use disorders.[20] The CAGE was combined with quantity-frequency questions (''How often'' and ''How much'' questions in order to determine the weekly averages and daily maximums) as recommended by the National Institute on Alcohol Abuse and Alcoholism.[21] A standard drink chart was used to estimate the number of units in specific drinks as suggested in the Uganda profile of the global status report on alcohol use.[1] Patients' drinking patterns were categorised into Safe drinking (cut-off 14 units/week for females and 21 units/week for males and High risk drinking (>14 units/week for females and >21 units/week for males)[22] In order to maintain the validity of the CAGE questionnaire, the quantity-frequency questions were asked after the CAGE had been administered.

All drinkers were further interviewed according to the DSM-IV diagnostic criteria to identify patients with alcohol dependence.[23] Patients who were identified as at high risk were given simple advice on alcohol related problems as a brief intervention method to reduce excessive alcohol intake as recommended by several studies.[17] Data on gender among all patients who were approached was only available in one of the PHC centers with 569 patients.

Data management and quality control
The study instruments were pre-tested to ensure clarity and acceptability of questions. The research assistants were trained by the principal investigators in structured interview methods. The research assistants were health workers who had previously had a one week orientation training in psychiatry.

Ethical Considerations
Permission to conduct the study was sought from the Ethical review boards, the District Director of Health service (DDHS) Kampala City Council and the Medical officers in-charge of the mentioned PHC units. Informed consent was also obtained from the patients who were approached at the commencement of the study.

Information about the nature of the study as well as possible risks and benefits was given. There was no monetary benefit. Confidentiality and privacy were emphasized throughout the study.

Results
Altogether 768 patients were approached in the study; 569 patients were from Kiswa Health Centre, while 199 patients from Naguru Health Centre. All 768 patients were asked if they had been drinking alcohol during the past year and 376 (49.0%) responded positively. Ten of the questionnaires were left out in the analysis due to missing information leaving 366 patients to be included in the analyses.

Out of all 569 patients at Kiswa PHC center, where data on gender was available, 99 (17.4%) scored over cut-off on CAGE and 162 (28.5%) had a High risk drinking pattern. Alcohol

Table I: Socio- demographic characteristics of the respondents who reported drinking (N=366)

Variable	Male		Female		Total		Statistics	
	n	%	n	%	n	%	Chi-square	p
Age Group								
18-24	28	13.0	48	31.8	76	20.8	19.500	< 0.05
25-34	110	51.2	65	43.0	175	47.8		
35-44	46	21.4	24	15.9	70	19.1		
45-70	31	14.4	14	9.3	45	12.3		
Education								
Uneducated	7	3.3	12	7.9	19	5.2	5.803	>0.05
Primary	73	34.0	58	38.4	131	35.8		
Secondary	85	39.5	54	35.8	139	38.0		
Secondary+	50	23.3	27	17.9	77	21.0		
Marital Status								
Single	61	28.4	48	32.5	110	30.1	5.080	>0.05
Married	137	63.7	81	53.6	218	59.6		
Separated/	17	7.9	21	13.9	38	10.4		
Religion								
Catholic	105	48.5	70	46.4	175	47.8	8.500	<0.05
Church of Uganda	95	44.2	57	37.7	152	41.5		
Moslem		5.1	14	9.3	25	6.8		
Others	11	1.9	10	6.6	14	3.8		
	4							
Occupation								
Unemployed	48	22.3	57	37.7	105	28.7	14.508	<.0.01
Employed	153	71.2	78	51.7	231	63.1		
Student	14	6.5	16	10.6	30	8.2		

dependence was diagnosed among 54 patients, i.e. 9.5% out of all patients. Among men 25.3% were CAGE positives vs. 10.7% among women. High risk drinking was identified among 35.6% of men versus 22.4% of women and alcohol dependence was diagnosed among 14.9% of men versus 4.9% of women. Socio-demographic characteristics of those who reported drinking are shown in Table I.

Out of the 366 patients who reported drinking alcohol, 215 (58.7%) were males while 151(41.3%) were females giving a male to female ratio of 1.42:1.The majority (68.6%) were below the age of 35 years with 74% females and 64% males in that age group. Mean age among all men was 33.1 years (S.D.=8.83) versus 29.8 years (S.D.=8.69) among all women.

More than one half (59%) of the respondents had gone up to secondary level and there were no significant sex differences among the different education groups. Over 50% of the respondents were married and there were no significant sex differences as regards the marital status. The majority (63.1%) of the respondents was employed and there were significant differences as regards the level of employment with the males more likely to be employed than the females.

Results from the CAGE and the quantity-frequency

Table II: Alcohol use disorders and drinking patterns among respondents who reported drinking (N=366)

Variable	Male (n=215)		Female (n=151)		Total (n=266)		Statistics	
	n	%	n	%	n	%	X2	p
CAGE								
Cutting down	149	69.3	88	58.3	237	64.8	4.72	< 0.05
Anger	61	28.4	37	24.5	98	26.8	0.67	> 0.05
Guilt	62	28.8	33	21.9	95	26.0	2.25	> 0.05
Early drinking	38	17.7	7	4.6	45	12.3	13.98	< 0.01
CAGE positive	88	40.9	44	29.1	132	36.1	5.35	< 0.05
Dependence	57	26.5	19	12.6	76	24.6	10.46	< 0.01
Safe drinking	71	33.0	59	39.0	130	35.5	1.42	> 0.05
Risk drinking	144	67.0	92	60.9	236	64.5	1.417	> 0.05

Table III: Socio-demographic factors related to being Cage-positive and diagnosed with alcohol dependence, respectively, among respondents who reported drinking (N=366).					
		Cage positive		*Dependence*	
	n	*OR*	*95%CI*	*OR*	*95%CI*
Gender					
Female	151	Ref		Ref	
Male	215	1.685	1.081-2.627	2.506	1.420-4.424
Age group					
18-24	76	Ref	-	Ref.	-
25-34	125	1.084	.605-1.843	1.031	.481-2.211
35-44	70	2.176	1.105-4.266	4.180	1.885-9.270
45-70	45	1.684	.781-3-269	1.688	.653-4.365
Religion					
Catholic	175	Ref	-	Ref	-
Church of Uganda	152	0.936	0.597-1.469	0.930	0.548-1.577
Muslim	25	0.777	0.318-1.901	0.664	0.215-2.050
Others	14	0.450	0.121-1.674	0.268	0.034-2.115
Marital Status					
Single	110	Ref	-	Ref	-
Married	218	1.508	0.970-2.600	1.601	0.884-2.898
Separated	38	1.422	0.654-3.093	0.958	0.340-2.625
Occupation					
Unemployed	105	Ref	-	Ref	-
Employed	231	1.152	0.713-1.862	1.077	0.607-1.910
Student	30	0.459	0.172-1.224	1.000	0.363-2.758
Education					
Uneducated	19	Ref	-	Ref	-
Primary	131	1.253	0.447-3.311	1.258	0.340-4.650
Secondary	139	1.335	0.478-3.725	1.468	0.401-5.372
Secondary+	77	1.042	0.354-3.063	1.627	0.425-6.220

questionnaires and the DSM alcohol dependence diagnosis are reported in Table II. Except for drinking pattern and Anger and Guilt as part of the CAGE questionnaire, men scored significantly higher on all measurements.

Being positive on CAGE and having a diagnosis of alcohol dependence were analyzed related to socio-demographic factors as shown in Table III. Men were almost two times more likely to be CAGE positives and two and a half times more like to have a diagnosis of alcohol dependence as compared to women. The age group 35-44 years were more than two times more likely to be CAGE positive and four times more likely to have a diagnosis of alcohol dependence as compared to the youngest age group. There was a tendency for Roman Catholics to be more likely to be both CAGE positives and dependent on alcohol. For marital status, there was a tendency that being married was associated with being CAGE-positive and having alcohol dependence. Age group and marital status remained significant in a multimodal regression analysis.

The likelihood to be asked by the PHC clinician about alcohol use was analyzed as related to socio-demographic factors as shown in Table IV. Males and patients with high risk drinking were about four times more likely to be asked about alcohol. There was a tendency for older patients to be more frequently asked about alcohol.

The most common diagnoses among the population were Malaria (39.2%), Respiratory Tract Infections (RTI) (23.8%), Urinary Tract Infections (UTI) (10.7%) and fungal infections (5.2%) as further shown in Table V. Malaria, HIV, peptic ulcer, gastro-intestinal disorders other than peptic ulcer, trauma and among women pelvic inflammatory disorders were entered as co-variates in a binary logistic regression with CAGE positive and alcohol dependence as dependent variable, respectively. Only gastro-enteritis were significantly associated with alcohol dependence (OR=4.882; 95%CI=1.449-16.470) and being CAGE positive (OR=4.962; 95%CI=1.294-19.033).

A current prescription of metronidazole was analysed separately as related to excessive drinking and being asked by the professional about alcohol. Thirty-five patients who were high risk drinkers and who were not asked about alcohol received the drug. Out of 23 patients who were asked about alcohol still 5 patients received metronidazole. On the other hand, those being prescribed the drug were more likely to be asked (X^2=4.152; p=.0.042)

Discussion

In summary, this study showed that at least half of all patients attending PHC reported drinking, 17.4% screened positive on CAGE and 9.5% were diagnosed with alcohol dependence.

Table IV: Odds ratios for clinician asking about alcohol as related to socio-demographic characteristics and drinking patterns among respondents who reported drinking (N=366).

Variable	Types	n	OR	95%CI
Gender	Female	151	Ref	
	Male	215	4.404	1.490 - 13.002
Age group	18-24	76	Ref	
	25-34	175	1.324	0.413 - 4.243
	35-44	70	1.383	0.356 - 5.370
	45-70	45	2.766	0.736 - 10.370
Education	Uneducated	19	Ref	
	Primary	131	0.489	0.123 - 1.941
	Secondary	139	1.383	0.356 - 5.370
	Secondary+	77	0.451	0.102 - 1.996
Religion	Roman Catholic	175	Ref	
	Church of Uganda	152	1.394	0.605 - 3.210
	Muslim	25	1.296	0.270 - 6.220
	Other	14	1.147	0.137 - 9.585
Marital status	Single	110	Ref	
	Married	218	1.89	0.682 - 5.234
	Separated/Divorced	38	2.471	0.627 - 9.727
Occupation	Unemployed	105	Ref	
	Employed	231	1.896	0.692 - 5.197
	Student	30	1.429	0.263 - 7.762
Risk drinking	Absent	130	Ref	
	Present	236	3.401	1.150-10.059
CAGE positive	Absent	234	Ref	
	Present	132	0.878	0.383 - 2.014
Dependence	Absent	290	Ref	
	Present	76	1.369	0.556 - 3.360

Among drinkers, drinking beyond safe limits was more common among men. Males and those aged between 35 to 44 years were more likely to be CAGE positive and to be diagnosed with alcohol dependence. Only 27 out of 366 drinkers were asked about alcohol by the PHC professional. Males and high-risk drinkers were likely to be asked. There was no association between specific diagnoses and likelihood to be asked.

Prevalence figures on alcohol drinking in this study compare closely with studies done in developing countries.[11,12] But alcohol dependence was almost five times more common in this study as compared to the study from Nigeria.[11] Out of all the respondents who reported drinking 65.6% were drinking beyond the safe limits (14 units for female and 21 units for the males). This finding is similar to that by Chinyadzaet al[12] in 1993 who found that over 60% of all patients attending primary health care in Harare were drinking beyond the safe limits. Abiodun who used a higher cut off for hazardous drinking (60g/day for men and 40g per day for females) found that 47% of all the drinking patients in his study were engaged in hazardous use of alcohol.[11] There was a male dominance among patients drinking alcohol but still a good proportion of the drinkers were females (24.2 %). A higher rate of dependence among the males as compared to the females has also been reported in other studies.[24] The proportion of females using alcohol in this study was unexpectedly high considering the prevalence of alcohol use among women in the community. However women are said to have a greater sensitivity to alcohol and they might be more likely to attend the primary health care unit, with alcohol related problems.[25]

The fact that the majority of these patients were below the age of 35 years could be a general reflection of the age group in the general population.[26] The high level of education, were more than half of the respondents had at least attained secondary education could also be a reflection of the increasing literacy rate in Uganda.[26] Its not surprising that the majority of those who drink were Christians of either the Catholic or Protestant faith. Christians actually constitute over 70% of the population in Uganda[26] and the majority are not

Table V: Somatic diagnoses among respondents who reported drinking (N=366)

Diagnosis	No.	%
Malaria	143	39.2
Respiratory tract infection	87	23.8
Urinary tract infection	39	10.7
HIV	17	4.7
Dental problems	9	2.5
Peptic ulcer disorder	14	3.8
Skin disorder	11	3.0
Trauma	13	3.6
Gastroenteritis	11	3.0
Pelvic inflammatory disorder	18	4.9
Fungal disorder	19	5.2
Pregnancy related disorder	4	1.1
Allergic reactions	9	2.5
Other sexually transmitted dis.	4	1.1
Others	19	5.2

barred from drinking according to their faith. Muslims and other Christians who are by faith not allowed to drink were the minority in this population of drinkers.

The marital status of the respondents may also be a reflection of the trends in the general population. This study did not try to separate those cohabiting from those who were legally married or had been staying with each other for a long time.

In this study there was no association between occupational status and excessive drinking among those drinking alcohol. A study done in Nigeria found that belonging to the higher occupation groups was associated with more drinking problems. However, we did not use the same detailed classification of occupation as Abiodun used.[11] It is therefore not surprising that the majority (63.1%) of the respondents in this study were employed. This study did not try to distinguish those who were self employed or running small businesses from those who were employed in the formal sector thus the seemingly higher level of employment in this drinking population being female was more likely to be associated with unemployment; women are more likely to be housewives and receiving support from their husbands as compared to the males. Such unpaid family workers do not usually regard themselves as employed.

Gastro-intestinal problems including infections, infestations and food poisoning were the only diagnoses among drinkers that were associated with high risk drinking which is in accordance with a study by Fleming and co-workers.[15] It could be that high risk drinkers are likely to live in poor hygienic conditions and be predisposed to such problems. The fact that a large proportion of high risk drinkers were prescribed metronidazole even in among cases where their drinking pattern was known by the health professionals deserves attention. It is well known that metronidazole might give severe side-effects in combination with alcohol.

There was no record of any alcohol related problem in the clinical notes of all the patients seen in this study and only 27 (7.4%) were asked about their alcohol use. This finding has been reported in previous studies; health workers do not normally detect alcohol related problems in patients under their care.[11,12,27] In this study high risk drinkers and male patients were the ones more likely to be asked questions about alcohol. The reason for this is not clear, however it's possible that high risk drinkers present with more obvious physical signs of alcoholism that may prompt the care giver to ask about alcohol. This study did not explore the nature of question asked by the primary health care worker but a previous study by Reid and co-workers 1998 showed that among physicians who regularly screened for alcohol 100% asked quantity-frequency questions, 39% also used the CAGE questions and 15% also cited use of biochemical markers.[28] Townes and Harkely[29] have actually suggested that physician prefer personal and clinical screening methods to questionnaires such as the CAGE. Its been suggested that many clinicians actually lack the skills necessary to initiate management of alcohol related problems in this setting but other factors such as lack of screening instruments, lack of awareness about the problems, inadequate training, lack of time, constraints of the health care system, patients attitudes and fear of confrontation have been said to contribute to the low recognition of alcohol related problems in primary care.[29,30]

Limitations
Full socio-demographic data was not collected among the non-drinkers even though data on gender was available in one PHC center. This means it was not possible to compare the socio-demographic characteristics of the drinkers and the non drinkers.

Study participants were drawn from patients attending Government PHC units. The patients are likely to be low-income earners from the surrounding informal settlement areas and may possess unique psychosocial co-morbidities that may increase the prevalence of alcohol related problems. The results in these two PHC units may not be generalized to the whole city of Kampala.

Conclusion
By determining the clinical epidemiology of alcohol use in PHC this study emphasizes the need for screening for alcohol use in Primary Health Care settings. It is recommended that this should be incorporated in the National drug and Alcohol Policies. Care professionals should be educated on alcohol-related problems and should be trained in brief intervention techniques that have been found effective in reducing problem drinking and its medical consequences.[16,21]

Acknowledgement

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