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PURPOSE AND SCOPE

The *African Journal of Drug & Alcohol Studies* is an international scientific peer-reviewed journal published by the African Centre for Research and Information on Substance Abuse (CRISA). The Journal publishes original research, evaluation studies, case reports, review articles and book reviews of high scholarly standards. Papers submitted for publication may address any aspect of alcohol and drug use and dependence in Africa and among people of African descent living anywhere in the world.

The term "drug" in the title of the journal refers to all psychoactive substances other than alcohol. These include tobacco, cannabis, inhalants, cocaine, heroin, prescription medicines, and traditional substances used in different parts of Africa (e.g., kola nuts and khat).

EDITORIAL AND MANAGEMENT TEAM

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A QUALITATIVE STUDY OF ALCOHOL RISK PERCEPTIONS AMONG DRINKERS IN BENUE STATE, NIGERIA

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ABSTRACT

There is evidence in the scientific literature linking alcohol-related deaths and morbidities with excessive alcohol consumption, yet individuals are often undeterred by their experiences of negative alcohol-related outcomes. In seeking to understand this behavior, this exploratory qualitative study was undertaken among Benue State civil servants in Makurdi, Nigeria to explore their reasons for drinking, perception of alcohol risk and, how these shape their alcohol consumption behaviors. Utilizing a purposive and network/snowball sampling technique, twenty-nine self administered open ended questionnaires were administered and analyzed. Findings indicated that drinking was primarily undertaken for enhancement and coping motives. Also, drinkers had knowledge of, and had experienced some alcohol-related dangers such as fights, rape, injury, and driving under the influence of alcohol. However, their drinking motives were valued over and above these experiences of negative alcohol effects, thereby minimizing the perception of personal susceptibility to alcohol-related risk. Problem drinking status, the availability of alternative substitutes to drinking and, drinking motives together determine alcohol risk perceptions and drinking behavior. Therefore, in order to fully understand drinking behavior, the influences of drinking motives, personal experiences, drinking status, availability of alcohol substitutes and, risk perceptions should be considered.

Key words: Alcohol risk perceptions, drinking motives, and hazardous drinking

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INTRODUCTION

Alcohol use is a major global public health concern. In 2004, the World Health Organization (WHO) estimated that a third of about 2 billion people that consume alcohol globally are likely to suffer alcohol-related disorder. Alcohol

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accounts for 2.3 million premature deaths and 4.5% of the burden of diseases respectively worldwide (WHO, 2009). These figures may be underestimates of the actual problem because in developing countries, some of the effects of alcohol are unrecorded (Dumbili, 2012). In Nigeria alcohol is the most commonly used psychoactive substance with a lifetime use of 58% (Gureje, Degenhardt, Olley, Uwakwe et al, 2007). Among male undergraduates its prevalence is 78.4% , with 27% of them being heavy drinkers consuming about 4 or more drinks per day (Chikere & Mayowa, 2011) and 12% among even secondary school students (Oguntola, 2012).

Nigeria has been identified as one of the countries with very high levels of alcohol consumption. The total adult per capita consumption (APC) of pure alcohol in Nigeria is estimated at 23.10 litres, which is one of the highest in the world (The World Health Organization – WHO, 2014). The pattern of drinking among users in Nigeria is also increasingly characterized by heavy episodic drinking, rather than moderate drinking (Dumbili, 2012). Estimates for 2010 indicated that the level of heavy episodic drinking (15-85+ years) was 25.6% and 17.7% for males and females respectively (WHO, 2014). The 2014 WHO Report scores Nigeria 3 on the pattern of drinking with scores ranging from 1 (least risky) to 5 (most risky). It is therefore not surprising that in sub-Saharan Africa, Nigeria is one of the most affected by alcohol-related deaths and morbidities (Dumbili, 2012).

It is generally believed that daily consumption of small amounts of alcohol is beneficial for health, especially in preventing heart attacks. Moderate consumption of alcohol is protective with certain diseases (Rehm, Baliunas, Borges,

Graham et al, 2010) and, the mechanism through which this pattern of drinking has salutary health effects includes: an increase in "high density lipoprotein cholesterol, reduction in plasma viscosity and fibrinogen concentration, increase in fibrinolysis, decrease in platelet aggregation, improvement in endothelial function, reduction in inflammation and, promotion of antioxidant effects" (Kloner & Rezkalla, 2007, p. 1306). But there is a problem with daily consumption of small quantities of alcohol, because most often it increases to damaging levels that may result in alcohol dependence (Desai, Nawamongkolwattana, Ranaweera, Shrestha, & Sobhan, 2003). This is why alcohol has been identified as one of the most important risk factors in the burden of disease (Rehm, Klotsche & Patra, 2007). Studies have indicated that the relationship between alcohol consumption and total mortality can best be represented by J-shaped or U-shaped curves (Kloner & Rezkalla, 2007), suggesting that there are levels above which the health benefits of alcohol consumption are completely lost, resulting instead in increasing morbidity and mortality.

The World Health Organization (WHO) (2011) identified two dimensions of alcohol consumption associated with disease and injuries – the pattern of drinking and, the volume of alcohol consumed, which are mediated through three intermediate mechanisms: toxic and beneficial biochemical effects; intoxication and; dependence (Rehm et al, 2010). Recent studies have found that both volume of consumption and patterns of drinking are related to burden of disease and nonmedical consequences of drinking (Kraus, Baumeister, Pabst & Orth, 2009). The comparative risk analysis (CRA) defines a

risky pattern of drinking as: i) consuming alcohol in higher quantities per occasion; ii) usually consuming alcohol to intoxication; iii) drinking in festive occasions and in public places and; iv) less frequent daily drinking and drinking with meals (Astudillo, Kuntsche, Graham & Gmel, 2010). The concept has been described and operationalized as the consumption of ≥60g of pure alcohol or, ≥5 drinks on a single occasion (Rehm et al, 2010) for men or, the consumption of 48g of pure alcohol or, ≥4 drinks for women (Dawson, 2011). It is also referred to as risky single-occasion drinking (RSOD), binge drinking (Astudillo et al, 2010), heavy episodic drinking (HED), or drinking in the event (Dawson, 2011). Some of the acute and observable maladaptive physiological, behavioral or psychological symptoms associated with risky pattern of drinking may include: blackouts, episodes of depression (Desai et al, 2003); ischaemic and haemorrhagic stroke (Rehm et al, 2010); domestic and community level violence, financial strain on the family by diverting funds away from essentials domestic needs, strained family relations, sexual violence – rape (Kafuko & Bukuluki, 2008); accidents (Dumbili, 2012); risky sexual behavior and unprotected casual sex (Oguntola, 2012).

Individuals that chronically use any substance, such as alcohol are often tolerant, as such they may behaviorally adapt and are able to function at work, home or in social situations even when under its effects (Falvo, 2005) and may not display any of the acute effects of alcohol use associated with risky pattern of drinking. Tolerant individuals often pride themselves in what may be termed the 'I can handle my alcohol' syndrome, believing that because they are able to fulfill their major role obligations, they are free of any harm attributable to their drinking. However, that they do not display any of the immediate observable physiological or behavioral symptoms of alcohol use, does not exculpate them from alcohol-related harm. The unobservable yet insidious effects of alcohol use may manifest in chronic diseases experience years after daily or frequent continuous consumption of alcohol. There is ample evidence in the scientific literature linking alcohol-related harm with average volume of alcohol consumption. Some of the chronic disease outcomes that have been causally linked with average volume of alcohol consumption (AVC) include; hypertension, adult diabetes mellitus, tuberculosis, some cancers, ischaemic and haemorrhagic stroke, cirrhosis of the liver, etc. (Rehm et al, 2010). Although there is no agreement on the exact volume of alcohol associated with chronic disease outcomes, increased risk for both mortality and chronic diseases occurs with an average daily volume (ADV) between 35g and 45g or, 245g to 315g per week (Dawson, 2011).

The decision to use alcohol is mediated by the individual's expectancies about alcohol's desirable consequences (Negreiros, 2006) and, it involves an assessment of the balance between the risk and costs of taking it against the personal enjoyment derived from it (Clark, 2010). This implies that risk is not "always harmful and associated with fear and fright, (but) for some risk and for some people it is linked to pleasure and excitement" (Calman, 2001, p. 50). Risk involves decision making and, a risky behavior may be undertaken either because of the element of risk involved or, despite the risk (Mun, 2004). Learning theory suggests alcohol users' expectations of the positive reinforcement derived from the behavior

(Mezquita, Stewart, Ibanez, Ruiperez, Villa, Moya & Ortet, 2011) and may perpetuate future alcohol-related expectancies and future drinking in a feed-forward process (Lee, Maggs, Neighbours, & Patrick, 2011), despite the risk. In the conceptualization of risk, Calman (2001) utilizes the relatedness of the concepts of hazard and risk, defining a hazard as "a set of circumstances that may have harmful consequences" and, risk as "the probability of the hazard causing such effect" (p.48). The probability of either the drinking pattern, or volume of alcohol consumed, or both causing injuries and disease, represents the risk of alcohol consumption, while alcohol risk perception is the degree to which a person believes he or she is susceptible to alcohol-related harm.

Risk perception is influenced by its severity, the consequences arising from its occurrence "as well as the individual's characteristics such as mood, a desire for control, previous experiences and personal belief system" (Walter & Britten, 2002, p. 580). It involves a complex interplay of various subjective factors that may be more important than the mere knowledge of adverse outcomes. Knowledge has been described as neutral and inert because what informs behavior eventually is the perception of that knowledge (Calman, 2001). Much of the work on alcohol-related consequences so far has been dedicated to the negative physical, social, and behavioral aspects, and only a few studies have studied the subjective positive reinforcing consequences of alcohol use (Lee et al, 2011). But, subjective positive consequences determine to a large degree, the perception of risk associated with alcohol use. However, most often, alcohol users' risk ascriptions are not in keeping with reality, for they underestimate the risks associated with their alcohol consumption behavior (Sjoberg, 1998). Therefore, it appears that subjective negative expectancies, rather than positive consequences, are associated with greater drinking behavior to the extent that they serve as a motivation for restrained drinking (Jones & McMahon, 1994). Because of these contrasting views, it has been suggested that the examination of positive and negative consequences need to be addressed in order to fully understand drinking behavior (Lee et al, 2011). From this view point, Karlsson (2012) focused on alcohol users' overall subjective evaluation of positive and negative consequences and concluded that what informs the decision to drink is not so much the absolute size of one's personal experience or observed negative consequences of alcohol, but the balance or ratio between negative and positive consequences.

To the extent that personal experiences with alcohol determine risk perceptions, a story told by an alcohol user recently informed the decision to undertake this study. He reported that on one of his drinking days, he started drinking with his friend from as early as 11am until well past midnight. But all he could recall of the day was, he unknowingly left his friend in the bar and it was not until the next day when his friend rejoined him that he realized he had driven over 120km from the town where they were drinking to his house and went to bed. The immediate danger he faced was a car crash, but he was lucky he was not involved in any. Again, that he could habitually drink at this level for many days of the week without any health problems, to him implied he was a 'good drinker' as such there was no problem to his drinking. This story is

just one of many alcohol users narrate entertaining themselves while drinking. They appear to be oblivious to the dangers associated with their alcohol consumption behaviors because they often get away with the immediate outcomes of drinking such as accidents, or even where they occur, their escaping serious harm. The long-term negative effects of alcohol are even too remote and abstract, and thus are totally disregarded.

Experience is believed to be the best teacher, but among alcohol users in this part of Nigeria, experience, it appears, does not impact on behavior. What is it that makes drinkers in Nigeria, a country known to have one of the highest alcohol-related morbidity and mortality in sub-Saharan Africa, underrate their negative alcohol-related experiences? There is a compelling need to study and understand drivers of drinkers' alcohol risk perceptions, which it is hoped would facilitate the design of appropriate measures targeted at the reduction in alcohol-related morbidity and mortality. This study is one of such studies, which was aimed at exploring qualitatively the determinants of alcohol risk perception among the civil servants in Makurdi. In undertaking this study, four research questions were utilized in assessing alcohol risk perception. These were: What are the respondents' motives for drinking? What is their self-reported frequency and average consumption of alcohol? Are they aware of any adverse health, physical and behavioral consequences of chronic and long-term alcohol use? What are their personal evaluations of the riskiness of their alcohol consumption behavior? It is hoped that knowledge gained from this small scale exploratory study would provide directions for further large scale studies aimed at investigating the drivers of alcohol risk perception and how they interplay to determine alcohol consumption behaviors.

METHOD

Participants

The participants were 29 Benue State civil servants, comprising 21 (72.4%) males and 8 (27.6%) females aged between 20 and 60 years (Mean=35.28, Standard Deviation=8.05). There were 19 (65.5%), 9 (31.0%) and 8 (3.4%) married, single and, divorced/separated participants respectively. Of the total 29 participants, 2 (6.9%), 13 (44.8%) and 14 (48.3%) had a secondary school certificate (SSCE), post-SSCE and, higher national diploma (HND) or university degree respectively.

Materials/Instruments

Data were gathered utilizing a 7-item open-ended questionnaire. Participants were given a structured 7-item open ended questionnaire to record their responses to the items in the spaces provided. Because participants were expected to write their responses in spaces provided on the 7-item questionnaire, inclusion criteria were being a civil servant and having a minimum educational qualification of a secondary school certificate. For informed consent, participants were informed in the questionnaire that participating was voluntary and that they were required to provide their socio-demographic data but should not reveal their identities. Furthermore, they were informed that by accepting to receive, complete, and submit to the researchers the questionnaires they had by that given their consent for participation.

Design and Procedure

This study employed a qualitative cross-sectional exploratory ex-post facto design aimed at understanding participants' drinking behaviors and their perception of risks associated with alcohol consumption.

Data were gathered in two phases. In the first phase, three in-depth interviews were conducted by one of the researchers with the aim of structuring the interview schedule for the study. Being a network/snowballing study, the first participant in the first phase was approached at a social event in which there was drinking. This female participant was asked if she would be ready to participate in the study. Prior to the interview, she was given an overview of the purpose of the study which was to determine drivers of alcohol consumption behavior and perception of risks associated with it. To establish informed consent she was informed that her participation was voluntary and she could opt out at any point she so desired. Therefore, by choosing to go through the interview voluntarily, she had given her consent to participate in the study. The ensuing in-depth interview session was aimed at obtaining as much information from her as possible concerning what informed her drinking behavior and her understanding of risks associated with drinking. The aim was to use the information elicited from her as a basis for further in-depth interviews. At the end of the session, she called and enlisted a male friend of hers, and an interview was scheduled with him in his office. This second interview too followed the pattern of the first and was aimed at eliciting enough information that would facilitate the construction of a structured questionnaire. The second participant also suggested another colleague of his in the same ministry that accepted to be also interviewed. The pattern of responses that evolved from the three in-depth interviews were used in constructing a theoretically driven 7 (seven) item open-ended questionnaire.

As in the first phase, participation in the second phase too was through the enlistment of friends. Participants were free to receive on behalf of their friends' copies of the questionnaire, which after completion, were returned to one of the researchers. Participants were required to return the questionnaires at a mutually agreed time of 3 (three) days from the day they received the questionnaires. The questionnaires were administered over a period of two weeks.

RESULTS

Data Analysis

Analyses of the responses of the participants were deductively generated based on existing theory and research literature and was organized under four themes: alcohol consumption motives; alcohol consumption behavior; risk awareness and; evaluation of personal risk arising from alcohol consumption.

Drinking motives were analyzed from participants' responses to the question, "why do you drink alcohol"? The question, "how many days of the week do you drink, and how much do you drink per sitting on such days?" was used in deriving participants' frequency/quantity measures of alcohol which were converted into standard drinks and used in assessing average volume of consumption and, drinking pattern. While this was easy for beer drinkers, it was not possible to convert into standard drinks quantities of palm wine and *burukutu*, because neither the serving

measure nor alcoholic content of palm wine and *burukutu* are standardized for they differ from one bar to another. The estimates of alcoholic content of wine and spirits could be ascertained but not the servings, therefore, quantification was not possible. Consequently, volume and pattern could be measured only among beer drinkers who disclosed the frequencies and the quantities they consumed.

In converting the quantity of beer the participants consumed into standard drinks, the Australian Department of Health and Aging (2009) formula for calculating standard drinks specified as a product of volume of container in litres (v), percent of alcohol by volume alcohol (abv) and density of ethanol at room temperature (0.789) was used. The volume (v) of a typical bottle of Nigerian beer is 600ml and its alcohol by volume (abv) is 5%. Using this formula the standard drinks in a typical bottle of Nigerian beer is approximately 2.4 drinks (i.e. 0.6*5*0.789=2.4).

The average daily volume (ADV) of alcohol consumption of beer drinkers was obtained as follows:

$$ADV = \frac{f.q(2.4)}{7}$$

Where:
- f = average number of drinking days per week
- q = average number of bottles of beer consumed on each drinking day
- 2.4 = number of standard drinks per bottle of beer
- 7 = number of days of the week

Assuming a standard drink contains 12g of pure alcohol, risky drinking pattern was defined as the consumption of ≥5 drinks (i.e. ≥60g of pure alcohol) for men and, ≥4 (i.e. 48g of pure alcohol) for women.

Risk perception was not directly measured, but was inductively derived through a proxy measure utilizing a set of questions. First, the participants were asked, "do you know of any negative health effects of alcohol, if yes, what are they?" This was used in assessing the participants' knowledge of the adverse social, behavioral and health effects of alcohol consumption. In addition, they were asked the following questions: "You know of these negative health effects of alcohol but why do you still drink?"; "Although you like and enjoy drinking alcohol, is there something about it that you do not like personally?" and; Have you had any negative, or bad experience with alcohol in the past three months?" and they were asked to specify the experience(s). The responses to these items were analyzed to assess risk perception.

In order to evaluate the availability of activities the participants could engage in other than alcohol consumption, they were asked to indicate the activities they knew of that could yield them similar satisfaction as alcohol. The intention behind this item was to determine the reasons why the participants indulge in alcohol consumption even in the face of less health compromising activities.

Findings

Relying on existing theory and research literature, drinking motives evolved deductively. In accordance with the motivational theory of drinking, the *raison d'etre* for the participants' drinking was to obtain either positive or, negative reinforcement. The participants considered alcohol consumption as an activity that enhances and deepens social interactions

and, opens up opportunities for people in the course of drinking. Their responses ranged from "*I drink because of company of my friends*" to "*I do take alcohol based on social aspects attached to it*".

One female participant puts it thus:

"*I drink to give me pleasure and to socialize with friends. Drinks also make me to know a lot of people especially the prominent people who can help me in time of need*".

At the personal level, they listed relaxation, pleasure and satisfaction as the enhancement motives for engaging in alcohol consumption. One of the male participants succinctly reported that alcohol consumption;

"*. . . is my best way of relaxation. I do drink (and) in the process . . . give it to others. It makes me feel high*".

A female participant reported that she,

"*. . . derives satisfaction from drinking (beer) . . . (and that she) "*. . . loves the taste and coldness (of beer) . . ."*" that is why she drinks only cold beer.

Many others responded that they consumed alcohol for "*pleasure*", "*relaxation*" "*fun*" and that "*it makes (them) high*". One of the female participants disclosed that alcohol is sexually enhancing to the extent that,

"*. . . it makes me fall in love with my boyfriend. I am shy of him so anytime I drink I fall in love with him.*"

Another female participant spoke in the third person when expressing the association between alcohol consumption and sexuality thus:

"*When I was a very young lady, my friend, a young man told me that alcohol makes him feel like having sex*".

Although sexual enhancement did not feature among the male participants, some of them believed that alcohol consumption enhances health. Some of the male participants stated,

"*Reasonable, responsible drinking is beneficial to one's health*",

"*. . . drink(s) palm wine because it contains yeast that clears eyes. Little quantity of palm wine cures stomach ache and gives pleasure*".

Alcohol consumption was also thought to enhance work productivity as some of the participants stated,

"*I take drink to make me active especially during work. It enables me to think fast (and) it helps me to detect mistakes from writing*".

"*I drink in company of peers to match up with them. I take a bottle or 2 to be alert and perform extra hard*"

Coping was also one of the motives listed by the participants. They listed "*easing tension*", "*relieving pressure*" and "*forgetting problems*" as some of the reasons why they consume alcohol.

A female participant reported,

"*When I am annoyed and not happy I drink and sleep off and forget the whole thing*".

Interestingly, the tendency for alcohol to relieve tension may have been recognized as only transitory, for a male participant reported that alcohol,

". . . takes away my sorrows in a short while. It makes me feel high".

Alcohol also emboldens as a female participant reported,

"It makes me feel bold, and it enables me approach men for assistance".

Alcohol is also used to escape negative emotions associated with boredom as a male participant reported using it

". . . to avoid dullness and solitary lifestyle since I'm a social being that needs the company of others".

The participants' drinking motives conform to the motivational model of alcohol use which posits that individuals choose to consume alcohol with the expectation that the positive affective consequences of drinking outweigh those of not drinking (Cox & Klinger, 1988). In keeping with the model, the participants can be classified either as enhancement motive (EM) or coping motive (CM) drinkers (Birch, Stewart, Wall, McKee, Eisnor & Theakston, 2004).

Given the various reasons they advanced for alcohol consumption, the participants were further asked to indicate if there are other activities they could engage in that would give them the same or similar pleasure as alcohol consumption. In all, 16 participants (55.2%) revealed there are other activities that they could undertake instead of drinking alcohol, but only 6 indicated the activities. Their responses included: "*watching films and engaging in sports*"; "*keeping friends and interacting with them and reading books*" and; "*sport activities, watching comedy films above all, engaging in church activities*". Like any of these listed hobbies,

alcohol was described by a participant "*. . . as a hobby, normally* (undertaken) *in social gatherings".* One of the participants had this to say,

"the ability to resort to such things instead of alcohol is that the alternatives are tied to socio-economic conditions which in most cases cannot be automatically realized at once".

This underscores the infrastructural deficits such as power and sporting facilities among others that could enhance people to engage in activities other than drinking, as another participant succinctly put it,

"Regular power failure stops me from watching movies to keep away from taking alcohol and lack of sports facilities within the vicinity".

For others, however, the inebriating effects of alcohol were valued more as was reported by a male participant thus,

"Other things cannot give you the excitement I derive from drinking together with friends'.

The descriptive statistics of the drinking behaviors of the 29 participants are displayed in Table 1. The information in Table 1 indicate that out of the 29 participants, 4 (13.8%) were occasional drinkers (i.e. drinking from 0-<1 days a week), while 16 (55.2%) comprising 11 males and 5 females were regular drinkers who consumed alcohol from 1 – 3 days of the week. Altogether, 9(31%) made up of 6 males and 3 females were classified as frequent drinkers, consuming alcohol for more than 4 or more days of the week. The types of alcoholic beverages consumed by the 29 participants also shown

Table 1. Descriptive statistics of participants' drinking behaviors

		Males (M)		Females (M)		Combined (M&F)	
		No.	%	No.	%	No.	%
Frequency of Drinking							
0-<1 days/week (Occasional Drinkers)		4	19.0	-	-	4	13.8
1-3 days/week (Regular Drinkers)		11	52.4	5	62.5	16	55.2
4+ days/week (Frequent Drinkers)		6	28.6	3	37.5	9	31.0
	Total	21	100	8	100	29	100
Alcoholic Beverages consumed							
Beer		12	57.1	7	87.5	19	65.5
Palm Wine		3	14.3	1	12.5	4	13.8
Burukutu		3	14.3	-	-	3	10.3
Bottled Wines		2	9.5	-	-	2	7.0
Spirits		1	4.8	-	-	1	3.4
	Total	21	100	8	100	29	100
Average Daily Volume (ADV) in grams (g)							
0-25g (Light drinkers)		4	40.0	2	33.3	6	37.5
26-40g (Drinkers Category I)		3	30.0	3	50.0	6	37.5
41-60g (Drinkers Category II)		3	30.0	-	-	3	18.8
>60g (Drinkers Category III)		-	-	1	16.7	1	6.2
	Total	10	100	6	100	16	100
Drinking Pattern (i.e. frequency of drinking in the event)							
Males							
<60g							
➡ 0-1 times/week		2	10.0				
➡ 2-3 times/week		1	10.0				
➡ >3 times/week		<u>2</u>	<u>20.0</u>				
		5	50.0				
≥60g							
➡ 0-1 times/week		1	10.0				
➡ 2-3 times/week		2	20.0				
➡ >3 times/week		<u>2</u>	<u>20.0</u>				
		5	50.0				
	Total	10	100				
Females							
<48g							
0-1 times/week		-	-				
2-3 times/week		-	-				
>3 times/week		-	-				
≥48g							
0-1 times/week		1	16.7				
2-3 times/week		4	66.6				
>3 times/week		1	16.7				
	Total	6	100				

in Table 2 indicated that; 19 (65.5%), 4 (13.8%), 3 (10.3%), 2 (7.0%) and 1 (3.4%) consumed beer, palm wine, burukutu, wines and, spirits respectively.

Out of 29 participants, 55.2% (16 participants comprising 10 males and 6 females) disclosed the frequencies and quantities of beer they consumed which were converted into standard drinks. From their disclosures their average daily volumes (ADV) and patterns of drinking were derived and are presented in Tables 2.

Employing the drinking categories by Rehm et al (2007) to classify these 16 participants, their average daily volume (ADV) shown in Table 2 indicated that 6 (37.5%) comprising 4 males and 2 females were classified as light drinkers (i.e., their adv's were between 0-25g) and 6 others comprising 3 males and 3 females fell in the drinking category I (i.e. they consumed between 26-40g). The drinking categories II (i.e., adv of 41-60g) and III (i.e. adv >60g) were made up of 3 males and 1 female respectively. Heavy episodic drinking (HED) consists of drinking in the event (or in the local parlance 'drinking per seating') of ≥5 drinks (i.e., 60g of pure alcohol) for men and ≥4 drinks (i.e., 48g of pure alcohol) for women. On the basis of this definition, 5 (50%) of the male participants consumed more than 60g of alcohol per each drinking event. Details (not shown in Table 1) revealed that one of the male participants reported consuming 115g twice each week and, out of the other 4 males that reported consuming 86g of pure alcohol per drinking event, one reported engaging in this pattern of drinking once a week, another thrice a week and, two others four times each week. In addition, 4 others reported consuming approximately 58g of pure alcohol, just under the cutoff at various

frequencies: one reported doing this once a week, another twice a week, while one reported this pattern of drinking 4 times a week and the fourth reported this pattern occurred seven days of the week.

The drinking pattern of the 6 females in Table 1 indicates that all of them consumed above 48g per drinking event at various frequencies. From details not shown in Table 1, out of the 6 females, 2 reported a pattern of 115g twice weekly and 7 times per week respectively. Two others reported consuming 86g thrice a week while the last 2 reported consuming 58g each once and twice per week respectively. Overall, the participants' drinking volume and pattern appear to be quite high.

Although there are risks associated with alcohol consumption, on the balance people drink in spite of these risks so as to obtain either positive or negative reinforcement. Even with the awareness that alcohol consumption is risky, many people, it has been found, still choose to drink (e.g., Raymond, Beer, Glazebrook & Sayal, 2009). In line with the literature, the participants' knowledge of the adverse effects of alcohol consumption were decomposed into two; acute and immediate (proximal) and, long-term (distal) alcohol-related harms. The long term health risks associated with prolonged use of alcohol and the frequencies with which they were mentioned by the participants included: liver problems (10); high blood pressure (4); diabetes (4); heart problems (3) and gastrointestinal problems and chest were mentioned once each. The immediate risks associated with alcohol and the frequency with which they were mentioned included: accidents (5); misbehavior (4); waste of money (4); fights (4); rape/unwanted and engagement in regrettable

sex (3); wife beating (2); psychiatric problems (2); hangover, heart burn, weakness of the body and unnecessary exposure to danger were mentioned once each.

In addition to their awareness of the risks associated with alcohol, they were asked to report on anything about alcohol they found detestable. Most of the issues reported related to intoxication and drunkenness which are highly stigmatized. Some male participants reported,

"What I don't like about alcohol is over drunkenness which leads to all manners of misbehavior"

"I don't like seeing people drink and misbehave".

Some female participants reported that alcohol;

". . . makes someone change his or her appearance when (drunk). . . (and) it makes someone misbehave",

"talk to people that (she) should not have (talked to)".

In a similar vein, one male participant reported of alcohol thus,

"it makes me dizzy and create room for me to talk too much and makes me behave irresponsibly when taken".

Some noted smell in addition to intoxication as things associated with alcohol consumption that they detest. For instance, some male participants reported;

"The smell from alcohol sometimes discourages me drinking it. Some people misbehave when they take it therefore discouraging me from taking it"

"odor, producing and selling environment is not hygienic . . . (and added) . . . continuous drinking of alcohol pushes one to a higher level which is likely to lead into abuse of it"

This indicates recognition that habitual drinking could result in alcohol misuse. Financial considerations too are associated with alcohol consumption as some of the participants reported;

"it makes me to over spend while under its influence"

". . . makes me spend in excess" which he added, *". . . causes disunity in my family".*

Participants reported several negative effects of alcohol which they experienced in the three months preceding the research such as, *"vomiting"*, *"unnecessary spending"* to what one female participant reported,

". . . it makes me have sex with men which ordinarily I shouldn't have sex with".

Another female participant reported she *"was raped and (had) unwanted sex",* after a drinking event. Fighting and quarrelling were some of the experiences of the participants. One of the male participants reported that alcohol

"influenced me to drive my wife away from my home",

Another reported fighting, while one other reported that alcohol *". . . got me drunk and got me a wound in the head".* A male participant reported staying out for long hours following a drinking event,

". . . thereby exposing (him) to extreme cold and threat of armed robbers".

It is obvious that the participants were aware of risks associated with alcohol consumption and, reported things associated with alcohol which they detest and, some reported experiencing some of the negative effects of alcohol. In spite of these, they continued to consume alcohol regularly for various reasons. Some of the participants waved off their alcohol consumption behaviors as something they choose to do that is within their control; therefore, they would never let it get out of hand. For instance, one of the ladies said,

"I am not a good drinker, whenever I feel satisfied I stop I do not continue because I see beer like other people"

According to her, a good drinker is *". . . a person who drinks a lot"*, but did not disclose how much is a lot. While she reported she could restrain herself, she thought others cannot, for they keep drinking as long as beer is available. A gentleman reported similarly saying,

"the quantity of alcohol I take and the frequency at which I take it convinces me that it is taken just as a food property or better still a drug supplement".

Another reported,

". . . a glass or 2 of burukutu cannot and will never lead one to any of these enumerated above. It must be noted that if others will keep these, there wouldn't be problem of abuse of alcohol".

These views suggest that the participants do not think their drinking behaviors put them in harm's way unlike other people who are not in control of their alcohol consumption behaviors. Another participant echoed this view thus,

"I strongly believe that people are affected by various alcohol hazards due to over indulgence in it".

However, in contrast to those who reported that they were in control of their alcohol consumption behaviors, others expressed helplessness. One of the ladies reported,

"I cannot imagine giving up beer because I cannot think of anything that can make me feel as happy as drinking beer. I feel fine so why should I give it up, what will I do instead?"

A male participant said, "I can't help myself", while another reported, *"My nature (and) character of indulgence does not permit a good explanation but as a stimulus it becomes automatic as a practice"* emphasizing that drinking is a habit that has taken on a character of itself.

DISCUSSION

The literature on alcohol indicates that the decision to consume alcohol is informed by an individual's expectancies of the desirable consequences associated with drinking. Deriving from this theoretical perspective, the civil servants drink for fun, pleasure, relaxation, to facilitate and/or deepen their social relationships, coping with stress, boredom and, for temporary escape from problems. This study has found that individuals' understanding of, and assessment of alcohol-related harm

associated with drinking, is determined by the interplay of motives for drinking, knowledge of adverse health effects of alcohol consumption, observation of the adverse effects of alcohol consumption on others, and personal experience of adverse effects of alcohol. These findings are consistent with other studies that have examined subjective evaluation of positive and negative consequences of alcohol and how they impact on risk perception (e.g., Karlsson, 2012; Lee et al, 2011).

Alcohol-related harm has been found to be erroneously equated with an inability to perform daily social functions. This arises from a conviction that because individuals are able to attend to their daily functions in spite of their alcohol consumption behavior, they are not in any imminent danger. In the study on Irish college undergraduates, Jiang (2009) found a similar attitude. But, linking alcohol-related harm only to the acute events following consumption is deceptive. This is because alcohol is an addictive mood altering substance and people who consume it for prolonged periods of time may develop tolerance to it which may result in an increased average daily consumption and, an increased probability of indulging in risky drinking patterns.

There appear to be tolerance in the participants' drinking behavior which is characterized by large volume consumption and heavy episodic drinking. For instance, their reported weekly volumes were well above those recommended in the guidelines on low risk drinking stipulating a consumption of not more than two standard drinks (i.e. ≤24g of pure alcohol) a day or, ≤14 (i.e. ≤168g of pure alcohol) for men and, ≤9 standard drinks (i.e. ≤108g of pure alcohol) for women

weekly (Bondy, Rehm, Ashley, Walsh, Single & Room, 1999). Contrary to the often overemphasized health enhancing effects of alcohol, the beneficial effects of alcohol have been found to occur at an average alcohol consumption level of about 5g/day (Nichols, Scarborough, Allender, & Rayner, 2012). This suggests that the much touted hype about the protective aspects of alcohol is more exaggerated than real. In addition, the participants' drinking pattern is characterized by risky or heavy episodic drinking, often drinking above the positive blood alcohol content (BAC) of 0.75g to 0.80g per kg of body weight which is associated with psychomotor and cognitive impairment (Dawson, 2011). But, negative outcomes such as accidental deaths have been found to be associated with risky drinking patterns. In a study on volume of consumption, patterns of drinking and all-cause mortality in the United States (US), it was found that accidental deaths were 10% higher in people who drank ≥5 drinks (i.e. ≥60g of alcohol) and, 6% higher among those who consumed ≥8 drinks (i.e. ≥72g of alcohol) on any occasion compared to the general population (Rehm, Greenfield & Rogers, 2001). This confirms that though prolonged drinking may result in tolerance, contrary to the common belief among users, tolerance does not insulate them from alcohol-related harm; rather, it increases their susceptibility.

The two major findings of this study relating to risk perceptions are; first, the participants had adequate knowledge of the adverse social, behavioral and health effects of alcohol and, secondly, they had experienced some of these effects but decidedly downplayed their seriousness. Findings show that overall, the participants did not ascribe any harm to their

alcohol consumption behaviors, and alcohol-related harms were more likely to occur in the lives of other people than theirs. This is in conformity with other research findings (e.g., Jiang, 2000) that alcohol users do not generally ascribe harm to their alcohol consumption behavior and, it is consistent with optimistic bias, whereby alcohol users consistently believe they are less at risk for any alcohol-related harm than their peers (Klein & Helweg-Larsen, 2002).

Secondly, they had experienced some negative consequences of alcohol but persisted in their alcohol consumption behaviors. Furthermore, they equated drinking with other leisure time hobbies which they undertook with their friends at the end of each working day in fulfillment of an important aspect of their social lives. This is in conformity with Shacham, Hoffer and Overton (2011) who found that their study participants considered drinking as part of their daily routines. This probably explains why they may have considered as only incidental whatever harms that may have arisen from their drinking behavior.

Alcohol risk perception is strongly influenced by individual experience. For example, women who had a previously healthy pregnancy reported increased alcohol consumption during pregnancy (Peadon, Payne, Henley, D'Antoine, Bartu, O'Leary, Bower & Elliot, 2010; Patterson, Hunnicutt & Stutts, 1992). While these findings suggest that people who have not experienced negative alcohol outcomes believe their drinking is below the harm threshold, what is inexplicable is why individuals who have had negative alcohol experiences do not ascribe risk to their drinking. There is clearly a disjunction between the drinking outcomes and the seriousness

attached to the risk, which in conformity with Walter and Britten (2002) suggests the perception of risk seriousness markedly affects the understanding of risk issues. As a strategy used in countering the dissonance between their knowledge, experience and behavior, drinkers are, according to Wild, Hinson, Cunningham and Bacchiohi (2001) generally accurate in the perception of the social and health risk associated with their drinking behaviors even if they tend to minimize their self-perceived risk relative to others, which Agostinelli and Miller (1994, cited on p. 118 in Wild et al, 2001) suggests is undertaken in order to protect themselves from threatening self-knowledge.

The impact of awareness and experience of risk on behavior can be situated within the context of the risk homeostasis theory which states, ". . . in any activity (e.g., alcohol use), people accept a certain level of subjectively estimated risk to their health, safety, and other things they value, in exchange for the benefits they hope to receive from that activity . . ." (Wilde, 1994, p. 1). The theory holds that as people engage in any activity, for example drinking, they constantly monitor the risk they believe they are exposed to (i.e. their actual risk) and compare this with the amount of risk acceptable to them (i.e. their risk target or threshold). The intention of this risk comparison is to reduce to zero, the difference between their actual risk and target risk. In keeping with the theory, that the participants, in spite of having experienced alcohol-related harm persist in drinking is an indication that they subjectively evaluate their negative experiences (actual risk) with alcohol below their risk threshold (target risk). Consistent with the work of Karlsson (2012), that drinkers' evaluation of their

positive experiences with alcohol are often much higher than the negative ones, thereby lowering their risk perception.

The findings also indicate that drinking behaviors may be driven by pleasure, enhancement of social relationships and, the avoidance of negative affect associated with either boredom or, stress of daily living. In keeping with the literature on drinking motives, the participants' drinking is driven by the enhancement (EM) and coping (CM) motives. Although the study did not differentiate between enhancement and coping motives of drinking participants, it can be inferred from the specific comments reported in this study that the motives, at least for the participants in this sample, were largely enhancement. This is consistent with the results of Gire (2002) who, in a cross-national study of drinking motives, found that Nigerian participants were more likely to drink for social and enhancement motives than their US counterparts. Drawing from the scientific literature, the findings of this study may be used to infer that the participants' drinking motives appear to have moderated their awareness and experience to dampen their risk perception. Notwithstanding that this study was not about problem drinking, research findings (e.g., Birch et al, 2004) suggest that there is an increased likelihood of alcohol users whose drinking behaviors are driven by drinking motives (i.e., enhancement and coping) to end up being problem drinkers. The participants' drinking behavior as indicated by the volume and pattern, suggests they are risky drinkers, which may be used as a proxy for problem drinking. It appears that the continuous use of alcohol by some of the participants is maladaptive, especially where negative consequences of alcohol have been experienced, which is an indication of alcohol abuse. In addition, the alcohol consumption behaviors of some of them appear to have met, to some extent, the DSM-IV-TR diagnostic criteria for alcohol dependence (APA, 2004). First, there are indications of tolerance (Criterion 1) in their drinking behavior. Secondly, their persistence in alcohol use as a recreational activity on which lots of time is invested and, the inability to either reduce or, abstain due to helplessness or habit appear to meet a combination of criteria 3 and 4. Lastly, the continued use of alcohol in spite of the awareness of having a physical or health problem that might be caused or exacerbated by alcohol, appear to meet criterion 7. To that extent that these findings are consistent with Wild et al., (2001) that the perceived vulnerability to alcohol-related harm is affected not only by whether a person is a problem drinker, but also by drinking motives. This conclusion implies that there may be alcohol problems in this population, but it should be treated with caution because the diagnostic criteria for alcohol dependence have not been fully met, although for some individuals, symptoms of tolerance or compulsive alcohol use may occur without them being dependent.

In summary, the findings of this study indicate that drinking motives drive alcohol use such that even with the awareness of, and personal and/or other person experiences of alcohol-related harm, people may choose to drink, suggesting that drinking motives more than compensate for whatever negative effects arising from drinking that may be experienced. The decision to drink rather than engage in other safer activities from which drinkers can derive pleasure, social enhancement and, beat stress and boredom, may be

because alcohol users' estimation of the benefits accrued from alcohol are much higher than those associated with other activities. In addition, the costs associated with the alternative activities such as, the energy and time invested in them may be considered more than the benefits (i.e. enhancement) and/or, the benefits may be considered less intense than those derived from alcohol use. Or, because alcohol rewards are proximal and available immediately it may be valued more than the deferred or distal rewards associated with other emotionally enhancing activities. For instance, before the benefits accrued from physical activities are felt and appreciated, one must invest both time and energy in them. But while the costs of physical activity are immediate, the benefits are distal. Other activities such as music, watching movies and, reading, though relaxing and enjoyable, when juxtaposed against alcohol associated benefits which are pleasurable, relaxing and inebriating, alcohol use may be preferred. For this reason, drinkers may minimize the perception of their susceptibility to alcohol-related risks and, persist in their drinking behaviors.

Implications of the study

There are obvious implications of this conclusion on health behavior. As a general proposition, it is expected that awareness of, and experience of personal or other persons' adverse effects of alcohol would motivate drinkers to restrict to the barest minimum their alcohol consumption. This proposition is premised on the determinants of health behavior such as knowledge, experiences, social influence, habits, self-confidence, attitudes, motivation and, possibility for change (Peadon et al, 2010). The health belief model (HBM)

for instance, conceptualizes two health beliefs: the perception of threat of illness which depends on perceived susceptibility to the illness and the severity of its consequences and, the evaluation of the effectiveness of behaviors to counteract this threat (Conner, 2002). The HBM posits that individuals will engage in a particular health behavior if they believe they have a susceptibility to a condition or illness they consider serious and, they believe that the benefits outweigh the costs of undertaking the behavior. There are many triggers or cues thought to produce the required changes such as, ". . . own illness, illness of relatives or friends, changes in self-perception, social pressure and exceeding limits determined by the behavior in question" (abstract, Meillier, Lund & Kok, 1997). However, awareness of, and experience of alcohol-related harm contrary to expectations, may not induce people to adopt health protective behavior. This may be explained, in part, by the notion that knowledge is neutral and inert (Calman, 2001) and that awareness alone may not drive health behaviors (Demaio, Dugee, de Courten, Bygbjerg, Enkhtuya & Meyrowitsch, 2013). On the other hand, experienced proximal alcohol-related adverse events may be heavily discounted, suggesting that the enhancing motives for drinking are rated higher and above the alcohol-related harm. In addition, even where the participants had medical problems such as hypertension, diabetes and heart disease, contrary to the sick quitter hypothesis that drinkers choose to discontinue drinking after experiencing medical problems associated with alcohol (Rehm, Greenfield & Rogers, 2001), they persist in drinking. This suggests they neither believed their drinking is a causal factor of their health status nor,

it contributes to disease progression. Addressing these issues has implications on public health policy, not only in the study area but Nigeria as a whole.

Public policy on alcohol aimed at controlling alcohol-related harm through behavior change needs to focus on alcohol users' perceived benefits from the substance and the barriers to limiting or, abstaining from alcohol consumption. It is obvious from the findings that any campaign on excessive alcohol consumption may likely fail if the goal is abstinence, because drinking is a part of our social milieu. There is also a tendency to underrate and downplay very serious alcohol-related experiences such as fights, driving or riding motor bikes under the influence of alcohol, unwanted sex and injuries. While drinkers may underrate their experiences simply because they have not reached their risk thresholds, society must not wait for that to happen before enforcing alcohol control measures. This is because there are externalities associated with alcohol-related harm once they occur. For instance, a car or motor bike crash may result in injury to the drinker alone, but the costs are not restricted to the drinker, they spillover. The costs for medical treatment fall on the individual and his family, stretching family resources, and on the society by burdening the health care system. Where there are fatalities involving other innocent bystanders, the costs to others and society are too high. Therefore, intensive alcohol risk campaigns should be undertaken targeting such events and making people aware of the gravity of these alcohol-related consequences.

Public awareness campaigns in Nigeria urging people to drink responsibly have so far had little or no effect on drinkers.

What is required is undertaking alcohol risk campaigns that challenge the self-exempting beliefs about alcohol suggesting drinking is glamorous, macho and, an indication of posterity. For effective alcohol control policy, the first area is to enforce legislation to tighten environmental controls in order to reduce the prevalence of alcohol related cues that currently exist. Presently, alcohol is readily available and sold to the young and old at many spots on nearly every street in Makurdi, without restrictions. It is sold near schools, in homes and, it is practically available twenty four hours a day. These environmental factors such as "proximity to alcohol outlets and neighborhood density" (Abikoye, 2012, p.8) are significant determinants of hazardous drinking. This constitutes great challenges to drinkers, because they are environmental cues alcohol users are exposed to which may serve to diminish any risk associated with its consumption, even if they may have experienced any harm associated with it. To control this, entails rigorously enforcing laws barring underage drinking and, restricting alcohol sale and consumption to legally designated areas and times.

Another policy issue that needs to be tackled is for Nigeria to domesticate a comprehensive alcohol policy. Currently, government is either deliberately or inadvertently failing to take action in correcting the misinformation on alcohol use being propagated by brewers and distillers through their advertisements and sales promotions that glamorize drinking (Dumbili, 2012; 2013). So long as this glamorization and portrayal of drinking even to intoxication as humorous and a *sine qua non* for enjoyment and enhancement of quality of life (Okoro, Brewer, Naimi, Moriarty, Giles & Mokdad, 2004)

continues, alcohol-related harm will not reduce. At the moment, there is no clear cut alcohol policy and drinking guidelines in Nigeria except to drink responsibly which may mean nothing (Dumbili, 2012) hence people continue to engage risky volume and patterns of drinking. It is therefore time Nigeria put in place a comprehensive alcohol policy with recommendations on safe drinking guidelines.

Limitations

Alcohol sizes and alcoholic content could not be ascertained for locally brewed beverages such as *burukutu* and palm wine. In addition, even where alcoholic content of drinks such as bottled wines and spirits are known, serving sizes are different because it is not the practice in Nigerian bars and drinking places to serve these beverages in standardized containers. To this extent, the volume and drinking pattern measures are limited for it could not cover all the participants.

The participants were not asked to directly respond to their estimation of risk associated with their drinking. It was thought this would appear judgmental, therefore the risk perceptions of the participants were derived from proxy questions. This is obviously a limitation because the risk ascriptions of the participants would probably have been different if they were asked directly.

Qualitative, unlike quantitative research, does not reduce everything to numbers, but through its methodology, it brings to the fore, personal experience and factors that drive behavior. To that extent, one of the limitations of this study is the failure to find out from the participants what, in their view, constitutes serious alcohol-related harm that they would factor in their risk perception.

Although alcohol use is idiosyncratic, it is from such personal views that a picture would emerge that would facilitate the designing and dissemination of alcohol risk issues and, alcohol use reduction strategies.

Directions for further research

From the preliminary findings of this study, subjective experiences play a key role in alcohol risk perception but, there may be other equally strong factors acting in determining risk perceptions of alcohol-related harm. In exploring multiple factors that determine risk perception, other researchers (e.g., Wild et al, 2001) have studied epidemiological risk status, drinking motives and the interplay of these factors in determining alcohol risk perception. Additional factors, such as personal subjective experience with alcohol, observed experience of others, the availability of alternative substitutes to alcohol consumption could also be factors worth considering. A quantitative design incorporating these factors to assess how they each and jointly determine alcohol risk perception may be employed in future studies, in order to enrich the literature. Although this study was not on problem drinking, the preliminary findings indicate the possibility that there is alcohol dependence among the participants. To that extent there is a need to undertake studies to determine the epidemiological status of drinkers in Nigeria. Although Wild et al (2001) did not find evidence of drinking motives moderating or mediating the relationship between epidemiological status and risk perception, preliminary results of this study suggest there may be inter-relationships between these variables, therefore they are worth investigating.

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STRESSFUL LIFE EVENTS AND ALCOHOL USE AMONG UNIVERSITY STUDENTS IN BOTSWANA

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ABSTRACT

Stressful life events are known to be associated with substance use, especially among young adults. In this study, the association between stressful life events and alcohol use among young adults pursuing university education in a university in Botswana was studied. A total of 312 young adults participated in the study (55.4% females, mean age = 21.58 (SD =1.87)). Student Stress Scale adapted from Holmes and Rahe's Social Readjustment Rating Scale (1967) was used to assess stressful life events. Alcohol use was assessed using a self-reported alcohol use scale. A majority (59%) of participants reported drinking alcohol. Stressful life events correlated moderately and positively with different types of alcohol use: quantity of alcohol consumed, the frequency of drinking beer, and lifetime drunkenness. Gender differences were observed for all types of alcohol use. The main reasons for drinking alcohol were to: celebrate special occasions, feel better, and enjoy the taste and effects of alcohol. In multiple regression analyses, stressful life events significantly and independently predicted quantity of alcohol consumed [(β=.25, (95% CI: .05, .45)], frequency of drinking beer [(β=.28, (95% CI: .11, .45)] , frequency of drinking wine [(β=.18, (95% CI: .04, .32)], drinking liquor [(β=.17, (95% CI: .02, .32)], drinking power drinks [(β=.28, (95% CI: .06, .49)], cocktail drinks [(β=.32, (95% CI: .13, .50)], and lifetime drunkenness [(β=.29, (95% CI: .11, .47)] but not age at first use. Stressful life events are strong predictors of alcohol use among young adults at university levels. More interventions are needed to tackle the adverse effects of stressful life events at university level and to teach students better coping strategies and better education on alcohol use.

Key words: Stress, alcohol use, Botswana, university students, life events

INTRODUCTION

Alcohol consumption among young adults in developing countries is on the rise and constitutes a major health problem (WHO, 2011; Gonzales-Alcaide *et al*., 2013; WHO, 2014; Obot, 2006). Different contexts contribute to differences

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in alcohol consumption among young adults in developing countries. One such context is the university setting where young adults will have attained the legal age for drinking, are unsupervised by parents or university authorities, are transitioning from adolescence to adulthood, and enjoy enormous freedom (Roche, 1998; Dumbili, 2013; Gilmore, Granato, & Lewis, 2013; Pearson, Kite, & Henson, 2013; Shumba & Ncube, 2011).Thus, the university context presents a distinct setting for excessive and often harmful and unhealthy alcohol consumption (Roche & Watt, 1999).

Another contributory factor to harmful alcohol consumption may be the experience of stressful life events. Previous studies have associated stressful life events with alcohol use (O'Connor & Colder, 2005). Many young adults pursuing university education often experience numerous life stressors such as academic, financial, time, health-related, and self-imposed stressors (Misra & Castillo, 2004). Stressful life events may be linked to alcohol abuse through about three pathways. First, stressful life events are known to be associated with mental health problems such as depression, which, in turn, have been linked to alcohol abuse (Read, Ouimette, White, *et al.* 2011). Second, alcohol abuse may be a maladaptive coping mechanism employed to deal with life stressors and frustrations resulting from the stressors (Rice & Arsdale, 2010; Park & Levenson, 2002). Finally, stress is associated with low self-control, which has been associated with increased alcohol use due to failure to restrain oneself (Morutwa & Plattner, 2014; Baumeister & Heatherton, 1996). Consequently, we hypothesize that experiencing stressful life events increases the likelihood of alcohol use.

Alcohol consumption is reported to have a euphoric effect that alters mood and is associated with temporary relief from stress, thus making alcohol consumption as one mechanism for avoidance coping (O'Connor & Colder, 2005). Although excessive alcohol consumption is widespread among university students globally, most studies are from Western countries (Dumbili, 2013; Gilmore, Granato, & Lewis, 2013; Pearson, Kite, & Henson, 2013; Shumba & Ncube, 2011).

This study will focus on the role of stressful life events on alcohol use among young adults following university education in Botswana. Botswana is an upper middle income country with a high prevalence of alcohol abuse (WHO, 2011), which, in turn, has been associated with high prevalence of HIV/AIDS (Gupta, Dandu, Packel, *et al.*., 2010; Weiser, Leiter, Heisler, *et al*., 2006), motor accidents (Mupimpila, 2008), and other social ills. Yet, studies on alcohol use among young adults in Botswana, particularly university students, are scarce (Weiser, Leiter, Heisler, *et al.*, 2006). Furthermore, young adults are a subpopulation where excessive alcohol use is reported to have a debilitating effects on later health (WHO, 2014) and impedes upward social mobility due to truancy, poor academic outcomes or school drop out altogether (Wicki, Kuntsche, & Gmel, 2010). Subpopulation differences have been suggested by previous studies. For example, various studies have found that males drink substantially more alcohol than females (Velazquez, Poulos, Latimer, & Pasch, 2012), other studies have found age differences in alcohol consumption (Gross, 1993; Leigh & Stacy, 2004) while others did not (Park & Levenson, 2002).

Additionally, previous studies suggest gender differences in the relationships between stressful life events and alcohol use with females using less alcohol than males (Sacco, Bucholz, & Harington, (2014). Similarly, gender differences have been reported in the distribution of traumatic and stressful life events with women reporting more traumatic and stressful life events than men (Hatch & Dohrenwend, 2007; Larsen, Engels, Wiers, Granic, & Spijkerman, 2012; Peltzer *et al*., 2012; Tangney *et al.*, 2004; Teesson *et al.*., 2010; Weiser *et al.*, 2006). For these reasons, we studied gender differences in our sample with respect to stressful life events and alcohol use.

The current study aimed to investigate the extent to which stressful life events predict alcohol use among young adults pursuing university education. Specifically, the objectives of the study were to: 1) investigate the level of alcohol use among the students, 2) explore the reasons for drinking alcohol, and 3) quantify the extent to which stressful life events predicts alcohol use. Further, based on the literature, we hypothesized that more stressful life events experienced is strongly associated with increased alcohol use.

The current study is embedded within the *Motivational Model* of alcohol use (Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995). The *Motivational Model* proposes a coping motive for alcohol use based on the principle of negative reinforcement and involve drinking to ease psychological distress such as those resulting from stressful life events and to make them more bearable. For example, experiencing stressful life events and resulting negative emotions like anxiety or depression leads to the expectations that alcohol will relieve one of the negative

feelings, and adopting maladaptive rather than adaptive coping styles, all motivate an individual to drink to cope with stress (Cooper *et al.*., 1992; Cooper *et al*., 1995; Kushner *et al*., 1994). Consequently, the *Motivational Model* will be used to explain the results of the current study.

METHOD

Study design and sample

In this study, cross-sectional design was employed. Participants were selected using a convenient sampling strategy. The population in this study were young adults pursuing tertiary education. To achieve a more representative sample, the sample was drawn from the first, second, third, fourth, and fifth years of study and from different faculties and institutes at the University of Botswana. Overall, 312 young adults (55% female, n= 173) agreed to participate in the study. The response rate was 92.6% with 25 questionnaires excluded from the study due to old age (e.g. students above 28 years of age).

Instruments and Measures

Demographic characteristics– A questionnaire specifically designed for the current study was used to collect information on demographic characteristics such as age, gender, year of study, faculty, and whether someone was brought up in urban or rural setting.

Stressful life events - To measure the stressful life events, the Social Readjustment Rating Scale (Holmes and Rahe, 1967) was used. The scale consists of 26-items and was modified to include stressful life events relevant to young adults in Botswana. The stressful life events ranged from family to school-

related events such as divorce between parents or failing an important course. The students were given the list of 26 stressful life events and asked to indicate which events they experienced over the past six months (the stressful life events are listed in Table 1). The events were binary coded as "yes=1" to indicate the occurrence and "no=0" to indicate no occurrence. The higher the score the more the number of stressful life events experienced. In this study, the stressful life events yielded a KR-20 reliability score of 0.78.

Alcohol use- To measure alcohol use, a self-report alcohol use scale was specifi-

cally developed for this study. The scale had five items: age at first use of alcohol, frequency of drinking beer, wine, liquor, power drinks, and a mixture of alcohol and power drinks (cocktail). The response format to the items on the alcohol scale ranged from never (=0) to every day (=4). Other alcohol use items included quantity of alcohol consumed during a drinking session (ranged from 1 to 10 or more drinks), reasons for drinking alcohol (e.g. my friends drink, I feel better when I drink) and lifetime drunkenness ranging from never (=0) to more than 10 times (=5). The more the student scored on quantity

Table 1. Frequency of stressful life events among students in the study (N=312)

S/No	Stressful life event	N	%
1	Failing to get the desired grade	270	86.5
2	Problems with assignments, tests, and exams	234	75.0
3	Financial problems (debts, lack of pocket money, etc.)	226	72.4
4	Troubles with registration (e.g. timetable clashes, system failure, etc)	220	70.5
5	Change in living conditions or accommodation	203	65.1
6	Troubles with transport	168	53.8
7	Death of a relative or close friend	167	53.5
8	Breaking up with a boy or girlfriend	163	52.2
9	Failing a course	162	51.9
10	Entering a new relationship (e.g. new boyfriend/girlfriend)	155	49.7
11	Having to retake or write supplementary exams	151	48.4
12	Loss of a computer, cell phone, or tablet	146	46.8
13	Personal injury or illness	143	45.8
14	Serious argument with a close friend	142	45.5
15	Illness in the family (e.g. cancer, diabetes, HIV/AIDS, etc.)	130	41.7
16	Death of a family member (e.g. parents or sibling)	123	39.4
17	Arguments with parents (dressing, curfew, etc)	97	31.1
18	Change in acceptance by peers	89	28.5
19	Trouble with parents	80	25.6
20	Serious argument with a lecturer	43	13.8
21	Problems with alcohol or drugs	38	12.2
22	Have you ever had any problems with the Police?	31	9.9
23	Excessive alcohol use by parents	28	9.0
24	Trouble with Law enforcement(e.g. fraud, parents in jail etc)	26	8.3
25	Unplanned pregnancy	19	6.1
26	Getting married	14	4.5

of alcohol consumed and lifetime drunkenness the heavier the students are perceived to use alcohol.

Procedure

Data was collected by a trained researcher who went around the university asking for permission from randomly picked lecturers in different departments to collect data from their classes. During data collection 330 questionnaires were distributed in seven different faculties of the University of Botswana (Education, Humanities, Health Sciences, Engineering and Technology, Medicine, Social Sciences, and Business). In the end, a total of 173 female and 139 male undergraduate students in their first, second, third, fourth, and fifth years of study supplied data for the current study.

Before the questionnaires were distributed to the participants, the background and importance of the study were explained to the participants who were also informed that participation was voluntary. The questionnaire consisted of three sections; demographic characteristics, stressful life events and alcohol use. The questionnaire took approximately 10 minutes to complete.

Ethical Consideration

Approval for this study was sought from the Institutional Review Board of the University of Botswana through the Department of Psychology. Only students aged 18 and above were included in the study. Participants were assured that information obtained from them was confidential and their names or identity were not required for the purpose of the study. The researcher explained to the participants that if they were emotionally affected by any question in the questionnaire, they could seek help from the Psychology Department where they would subsequently be referred to an appropriate agency for psychological help. In addition, a debriefing statement was also handed to those who completed the questionnaire. The debriefing statement reiterated the same information on where to seek help in case of psychological problems resulting from participating in the study.

Data Analyses

Descriptive statistics (mean, standard deviation, and range) were used to compute the demographic characteristics of the participants. In addition, the relationship between variables in the study (e.g. stressful life events and all the alcohol items) was computed using Pearson correlation analyses. A list of the stressful life events and their occurrence, the quantity of alcohol consumed, and the reasons for alcohol consumption were computed and presented. To assess the extent to which the number of stressful life events experienced predicted alcohol use among the students was assessed in a multi-variable regression model where different types of alcohol use were regressed on the number of stressful life events experienced each at a time. Both the experience of stressful life events and alcohol use are known to vary with gender (O 'Connor & Colder, 2005; Sacco, Bucholz, & Harrington, 2014) and for this reason, all analyses were adjusted for gender. Preliminary analyses showed that age was not a significant predictor of the outcome variables and consequently, it was removed from further analyses. All the statistical procedures were performed using IBM SPSS version 23.0 (IBM SPSS, 2014). Associations with a p value less than 0.05 were considered statistically significant.

RESULTS

A total of 312 students participated in the study of whom 173 (55.4%) were females. On average, the students were 21.58 (SD= 1.87; range 18-25) years old with males significantly older than females (t (267) = 4.78, p< 0.01).

Table 1 represents the frequency of the stressful life events. Significantly higher numbers of stressful life events reported by the students were related to their education (e.g. failing to get a desired grade, problems with tests or exams) followed by personal circumstances such as death of relatives or friends, entering new relationships, illness in the family, etc. (Table 1). The mean score for the number of stressful life events reported for the total sample was 10.47 (SD = 4.37, range 1-22). Male participants reported experiencing significantly higher numbers of stressful life events than females (t (307) = 2.69, p< 0.01).

Male participants consumed larger quantities of all types of alcohol and reported more incidents of lifetime drunkenness than their female counterparts. A total of 183 students (59%) reported that they drink alcohol. Significantly more male participants indicated that they consumed larger quantities of alcohol (t (257) = 4.46, p< 0.01), more beer (t (189) = 5.74, p< 0.01), and experienced more lifetime drunkenness (t (204) = 4.51, p< 0.01) than female participants. Among participants who reported using alcohol, 46 % (n=42) of the female students use alcohol regularly (3 – 8 drinks or more per day) while 57% of the male students were regular users (5-10 drinks or more per day). Those who indicated that they drink alcohol experienced significantly high number of stressful life events than those who do not consume alcohol (t (310) = -4.53, p< 0.05). Likewise, differences based on place of up-bringing (rural or urban setting) were found for quantity of alcohol consumed (t (186) = -4.14, p< 0.01), frequency of drinking beer (t (152) = -2.43, p< 0.01), wine (t (142) = -2.48, p< 0.05), and liquor (t (126) = -2.63, p< 0.05).

Stressful life events significantly correlated with frequency of different types of alcohol and lifetime drunkenness (Table 2). On the other hand, different

Table 2. Bi-variate correlations between variables in the study (N=312)

	1	2	3	4	5	6a	6b	6c	6d	6e	7
1 Age	1	-.28**	.08	-.12	.18**	.17*	.08	-.03	.14	.13*	.14*
2 Gender		1	-.15*	.15*	.25**	-.38**	.07	-.18*	.05	-.05	-.28**
3 Stressful life events			1	-.07	.26**	.36**	.22**	.24**	.29**	.35**	.31**
4 Age of first use of alcohol				1	-.08	-.21**	.17*	.20**	-.12	-.09	-.24**
5 Quantity of alcohol consumed					1	.58**	.46**	.46**	.30**	.38**	.57**
6a How often do you drink beer?						1	.45**	.49**	.45**	.53**	.67**
6b How often do you drink wine?							1	.73**	.45**	.51**	.50**
6c How often do you drink liquor?								1	.46**	.53**	.53**
6d How often do you drink power drinks?									1	.71**	.39**
6e How often do you drink a cocktail?										1	.43**
7 Lifetime drunkenness											1

Key: ** correlation significant at 0.01 level (2 tailed).
    * correlation significant at 0.05 level (2 tailed).

aspects of alcohol use correlated significantly among themselves (Table 2).

Participants differed widely with respect to the reasons for using alcohol. However, many indicated special occasions, liking the effects of alcohol, feeling better after consuming alcohol, and enjoying the taste of alcohol as the main reasons for using alcohol (Table 3). In general, nearly all the reasons were emotional in nature (e.g. drinking during special occasions, liking the effects of alcohol, feeling better after drinking, and enjoying the taste of drinking).

Stressful life events (adjusted for gender) significantly predicted all the aspects of alcohol use except 'age at first use' (see Table 4). The coefficient after the regression of different aspects of alcohol use on stressful life events ranged between β= .17 (95% confidence interval (CI): .02, .32) for using liquor to β= .32 (95% CI: .13, .51) for using cocktail drinks (mixture of alcohol and power drinks). Each regression coefficient represents the number of standard deviation (SD) change in the outcome variable per SD change of the independent variable. For example, the regression of cocktail drinks on stressful life events means that a change of 1 SD in stressful life events is associated with a 0.32 SD increase in using cocktail drinks.

Table 3.   Reasons for alcohol use, number of users, and correlations with SLE

Reasons for alcohol use	Number of users		Correlation with SLE
	n	%	r, p value
During special occasions	136	43.6	0.18, **0.00**
I like the effects of alcohol	73	23.4	-0.14, **0.04**
Feel better when I drink	68	21.8	0.12, **0.00**
Enjoy taste of alcohol	66	21.2	-0.15, **0.03**
It's legal to drink	60	19.2	0.08, 0.24
My friends drink	53	17.0	-0.13, 0.06
To try	48	15.4	-0.09, 0.20
It's a habit in my family	19	6.1	-0.04, 0.55

Key: SLE=stressful life events; n= number, r= correlations

Table 4.   Multivariable analyses of alcohol use and stressful life events experienced

Variable Name	Stressful life events as a predictor of alcohol use	
	β	(95% CI)
Quantity consumed	**0.25**	**.05, .45**
Beer frequency	**0.28**	**.11, .45**
Wine frequency	**0.18**	**.04, .32**
Liquor frequency	**0.17**	**.02, .32**
Power drinks frequency	**0.28**	**.06, .49**
Cocktail frequency	**0.32**	**.13, .51**
Lifetime drunkenness	**0.29**	**.11, .47**

Key: β = Beta (adjusted for age and gender),
       CI = Confidence Intervals

DISCUSSION

The objectives of the current study were to assess the level of alcohol use, reasons for alcohol use, and to determine the extent to which stressful life events predict alcohol use among students at a university in Botswana. The findings showed that more than half of the participants in the study use alcohol with male students reporting more alcohol use than female students. The students reported that they use alcohol mainly during special occasions and because they like its effects, feel better after consuming it, and that they enjoy the taste. Stressful life events significantly predicted all aspects of alcohol use except age at first use. The higher the number of stressful life events experienced the more the likelihood of using alcohol. This finding supported the hypothesis of the study.

In general, the results of the current study support previous studies where alcohol use was found to be more common among male than female participants (Velazquez, Poulos, Latimer, & Pasch, 2012). Among the students who use alcohol, almost half of the female students (46 %) and more than half of the male were regular users (3 – 8 drinks or more per day for females and 5-10 drinks or more per day for males). The alcohol per capita consumption (APC) is higher in Botswana (8.4 litres of pure alcohol) compared to the global figure of 6.13 litres (WHO, 2011). Similarly, the prevalence of heavy episodic drinking (consuming at least 60 grams or more of pure alcohol on at least one occasion in the past 30 days) is even higher in Botswana at 17.2% among drinkers and 7.2% among the population (WHO, 2011). The level of alcohol consumption among the students

as reflected in the results of this study could be an indication of what takes place in the community and society in which the students find themselves. Previous studies showed that college drinking behaviour mirrors what happens in the "wet environment" where alcohol is cheap and easily accessible (Weitzman, Nelson, & Wechsler, 2003, p. 26).

Reports of using alcohol during special occasions, because of liking its effects, the feelings that ingesting alcohol generate, and its taste, all pointing to the idea and perception that alcohol is not only used for recreational and leisure activities (Pearson, Kite, & Henson, 2013; Seloilwe, 2005) but also for emotional reasons. All the above reasons are affective and could be linked to emotional-focused coping where the students drink alcohol as a response to their emotional states (Staiger *et al*., 2009) and especially when they feel they may not be in control anymore. This finding is corroborated with previous studies where alcohol use was found to significantly relate to lack of self-control (Morutwa & Plattner, 2014). Negative affect may include stress, anxiety, and depression resulting from the stressful life events encountered. This emotional reason may be understood within the framework of the *Stress Reduction Model* of explaining alcohol use (Cooper, Frone, Russell, & Mudar, 1995; Cooper, Russell, Skinner, Frone, & Mudar, 1992; Kalodner, Delucia, & Ursprung, 1989). In this model, experiencing stressful life events and resulting negative emotions like anxiety or depression, motivates a person to use alcohol with the expectation that it will relieve one of the negative feelings, thus adopting an avoidant coping strategy to cope with stress (Cooper, Frone, Russell, & Mudar, 1995; Cooper, Russell, Skinner,

Frone, & Mudar, 1992; Kalodner, Delucia, & Ursprung, 1989).

Similarly, the *Motivational Model* may explain the findings in the current study where students who experienced higher number of stressful life events would use more alcohol. Stressful life events are known to be associated with depression, anxiety, and more psychosocial distress (Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995), which may be linked to the notion that drinking will relieve one of the negative feelings associated with stressful life events.

Previous studies have also associated the temperamental typology of novelty seeking to drug and substance use (Chartier, Hesselbrock, & Hesselbrock, 2010). Novelty seekers are known to be impulsive, excitable, extravagant, disorderly, with poor self-regulation, all characteristics that predispose to novel and exploratory behaviours (Cloninger, 1986; 1987; Pfohl, Black, Noyes, Kelley, &Blum, 1990; Morutwa & Plattner, 2014), which, in turn, may put novelty seekers at risk of experiencing stressful life events which may eventually predispose them to further alcohol use. Therefore, it is possible that it is a combination of personality (e.g. temperament) and environmental **factors** (e.g. life stressors, "**wet environment**", etc.) that predispose young adults to more alcohol use.

Gender differences were observed in alcohol use and this is consistent with previous studies (e.g. Weiser *et al.*, 2006). Males were more likely to drink larger quantities of alcohol, scored higher on frequency of drinking beer and liquor, and lifetime drunkenness than female participants. Moreover, gender differences have been found in stressful life events in many studies (e.g. Sacco *et al.*, 2014).

Surprisingly, in the current study, males were more likely to experience stressful life events than females. It is possible that in this sub-population, the density of life stressors is more among male than female participants.

Limitations

The study findings should be cautiously interpreted due to a number of limitations. First, stressful life events and alcohol use were self-reported. This could have limited the reliability of the scales as participants could have under-reported alcohol use due to social desirability. Second, other predictor, moderator, and mediator variables such as depression or anxiety were not assessed and adjusted for due to the limitations in the cross-sectional design which do not allow for causal inference. Third, the sample size was small and unrepresentative of young adults or students following tertiary education, thus limiting external validity of the findings to other student population. However, the findings in this study agree with results of previous studies and are indicative of the current trend of alcohol use among young adults. Consequently, more longitudinal research is required to disentangle the roles of individual, family, and environmental contexts in the trajectory of alcohol use among young adults in tertiary education.

CONCLUSION

Stressful life events are a strong predictor for alcohol use among university students. Differences with respect to gender and place of upbringing may provide the environmental context in which stressful life events thrive to influence alcohol

use. Information on life stressors, place of upbringing, and coping mechanisms is important for designing effective interventions to reduce alcohol use among university students. Such interventions may include better coping strategies and education.

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CONFLICT OF INTEREST

None.

AUTHORS' CONTRIBUTIONS

KKM and KAP designed the study and KKM implemented the survey. KKM had the original idea for the manuscript, collected and prepared data for analyses, and wrote the first draft of the manuscript. KAP analysed the data and interpreted the results. Both authors critically revised the manuscript for important intellectual content and approved the final version of the manuscript.

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IMPLEMENTING NEEDLE AND SYRINGE PROGRAMMES IN KENYA: CHANGES, OPPORTUNITIES AND CHALLENGES IN HIV PREVENTION

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ABSTRACT

HIV infection among people who inject drugs (PWID) in Kenya is at 18%, and has been attributed to risky injecting practices. The risk environment enabling these practices has not been explored. This paper reports findings from Access to Care, a qualitative study in Kenya. Using in-depth interviews with PWID, we explore how the introduction of needle and syringe programmes (NSP) has impacted on needle and syringe sharing. PWID report significant reductions in sharing injecting equipment following NSP, although sharing continues, linked to challenges in supply and amongst PWID living with HIV, linked to hopelessness for the future. We conclude that NSP should expand across Kenya, linked to efforts to overcome delivery challenges and efforts to support people living with HIV.

Key words: People who inject drugs, HIV, needle and syringe programme, Kenya, people living with HIV

INTRODUCTION

HIV prevalence within the Kenyan population of People Who Inject Drugs (PWID) is an estimated 18%, three times that of the general population, and being even more burdensome among women who inject drugs, whose prevalence is estimated at 44% (NACC, 2012). Other countries in Sub Saharan Africa are also reporting injecting drug use as a major risk factor for HIV (Needle et al 2006; Mathers et al,. 2008; HRI 2014). The sharing and reuse of needles and syringes is a key risk factor for HIV for PWID (Mathers et al,. 2008; Eluwa et al, 2012). A 2011 study in Kenya reported high rates of sharing, with almost 50% of PWID sur-

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veyed reporting sharing at their last injection (CAHR, 2013). In response the Kenyan government has sought to respond to the needs of PWID (NACC, 2009), in particular through partnering with civil society organisations to introduce a needle and syringe programme (NSP). NSP are evidenced to reduce HIV infections among PWID through providing a regular supply of unused needles and syringes (WHO, 2004).

The Needle and Syringe programme in Kenya, one of the first in Sub Saharan Africa, was pioneered by The Kenya AIDS NGOs Consortium (KANCO). The programme, focusing on Nairobi and Coast regions, was implemented by community based organisations working in harm reduction (Nairobi Outreach Services Trust in Nairobi; Muslim Education and Welfare Trust and Reachout Centre Trust in Mombasa, Teenswatch in Ukunda and The Omari project in Malindi). The model followed focused on a combined fixed-site and outreach model of distribution. The programme was rolled out as a flexible needle and syringe exchange programme without a strict one-for-one policy. The programme end line report noted that 88% of PWID interviewed reported using a clean needle and syringe (Mutuku, 2014). After inception, a number of organizations also initiated NSPs, including Medecins du Monde (MdM) and Support for Addiction, Prevention and Treatment of Addiction (SAPTA). Combined with these and other programmes that came after, an approximate 4500 PWID had been reached with clean injecting equipment, and over half of PWID surveyed reported using sterile injecting equipment in the country (HRI, 2014). There are now efforts to scale-up the NSP programme across Kenya.

There has been little study of harmful injecting practices, the risk environments for them, and how NSP programmes can be developed in response in African contexts. Previous study in Kenya highlighted the influence of policing on reuse of needles and syringes left in injecting sites (Beckerleg, 2005). Although availability of clean needles and syringes is a core factor in sharing, there can also be a combination of environmental, political and social factors that increase the risk of sharing (Bourgois, 1998; Rhodes, et al., 2005; WHO 2004; Strathdee, et al., 2010). These factors include, but are not limited to, homelessness, incarceration, local policing practices, costs of syringes, drug trafficking and distribution routes, gender and laws and policies governing possession of drugs and drug paraphernalia (WHO,2004; Strathdee, et al., 2010). As the needle and syringe programme developed in Kenya we set out to investigate PWID experiences of the programme and its reported impacts. In-depth study of the programme and responses to it is essential to understand how the NSP was implemented and shaped in these specific contexts and risk environments (Rhodes et al, 2009). Understanding these experiences is key to informing the on-going development of NSP in Kenya and across Sub-Saharan Africa.

METHOD

This paper draws on data collected through the Access to Care Study, a longitudinal, qualitative study, employing in-depth interviews and observations to understand PWID experiences of HIV and the risk environment for them. Here we report on data as it relates to experiences

of NSP in particular; elsewhere we have reported on experiences of drug treatment and methadone (Rhodes et al., 2015, Rhodes et al., 2015). The study was based in three areas in Kenya: Nairobi and then Malindi and Ukunda in Coast province. We followed PWID over three waves of data collection to understand changes in experience, and increase depth of understanding of the social and structural context. We conducted interviews with 109 PWID at wave 1 in late 2012 just as NSP was being introduced, sampling for a range of experiences based on gender (33 were female respondents), and HIV status (44 PWID were living with HIV). We repeated interviews and included others in our sample over two further waves in 2013 after NSP was introduced, interviewing a total of 118 people who use drugs. These interviews explored the day-to-day lives of PWID in relation to their drug use and access to harm reduction, drug treatment and HIV prevention and care services, and recorded how these were influenced by the social environment.

Analysis followed a thematic approach (Ezzy, 2002), iterating with on-going data collection to explore emerging themes. Interviews were recorded and transcribed. We read transcripts as a group and identified emerging themes. We then explored for these themes across the data set. Based on these initial analyses we developed a coding framework which we applied across the data. Initial findings were discussed with community stakeholders and at an international conference (Ndimbii, 2013) to further develop and explore findings. The study had ethical approval from the University of Nairobi and the London School of Hygiene and Tropical Medicine. All respondents provided informed consent; all names used are pseudonyms to protect confidentiality.

RESULTS

We first report how PWID described needle and syringe sharing to us before NSP was introduced. The second section focuses on accounts following the introduction of NSP.

Needle and syringe access and sharing before NSP introduction

PWID commonly reported that they didn't share needles and syringes as our study started, and before NSP was introduced. This was often presented around an awareness of HIV and the risks that sharing posed:

"I am so careful because of HIV, because I heard about it, that is why I don't like to share syringes with anybody" (Nelson)

Awareness of HIV was generally high across those we interviewed, linked to long-standing outreach work in the community. However, these reports of not sharing we interpret as often offering 'public accounts' presented to us, reflecting the shame and stigma linked to needle and syringe sharing. Through repeat interviews we developed trust, and people would shift their accounts, from claims of having never shared, to disclosing they had. Beatrice, in the first account narrated how she had never shared, including never sharing with her husband, an injecting drug user as well: *"I don't even share needles with my husband"* In later interview accounts, she did disclose her previous sharing, as well as disclose her recent sero conversion of HIV. *"[Interviewer- How was*

it until you thought of being tested (for HIV)?] Because me I was at times, I was sharing the needle with my husband".

Accounts of managing risk of sharing and awareness of the risks involved were however widespread suggesting there were common efforts to avoid it. Access to clean injecting equipment was reported to be difficult and involved a balance between the prevention of withdrawals, hustling to get drug money, navigating a punitive policing environment and operating hours of pharmacies. Before the introduction of the NSP, access to clean injecting equipment was mainly from retail pharmacies and shops in the vicinity of drug using sites.

It wasn't always possible to buy from chemists and access to clean injecting equipment was then reliant upon medical practitioners and veterinarians, but also drug dealers, 'hit doctors' (PWID who are paid to inject others) as well as friends and other people who inject:

"R: I went and bought a syringe from someone who sells up there for fifteen shillings per syringe…

I: But it is not a Chemist

R: no, it is not a Chemist. At the Chemist they at times refuse to sell to us" (Lara)

Buying needles was limited by the possibilities of getting money, which itself required hard work and careful planning, and for many a combination of 'hustling', petty crime, sex work, begging, and occasionally formal work, which was limited for most.

As well as buying new needles and syringes to avoid sharing, there were

careful efforts to store and carry injecting equipment that had already been used for later reuse. Abraham for example, who reported never having shared, gave this account:

"I: And you use the same needle for a week?

R: Yeah, that only one needle.

I: How blunt do they get?

R: Yeah I wash, I finish injecting, I take my needle, it get wash, I take the paper, newspaper, I roll it, I tie it with a rope and I keep it in my pocket.

I: Do you have the needle now?

R: I go round with my needle."

Whereas this carrying of needles and syringes for use would minimize risks of sharing it would increase other risks. Needle and syringe possession in Kenya is illegal, leading to risk of imprisonment, police violence and demands for bribes:

"you cannot keep walking around with this thing…if you are caught by the government, there are those who spoil, there are those who will take you to the police. Now if taken to the police you see you will really suffer" (Simba)

PWID were therefore also afraid of carrying needles and syringes. In response people would leave needles and syringes hidden in walls, under rocks, or under rubbish in public areas, to allow them to have easy access when in a drug using site. It was however possible for others to find and then use this equipment that others had left:

"Maybe he is seeing where I am hiding it. When he sees where I am hiding it, when I leave, He comes and takes it. Now me when I come back I find it is not the one" (Ruth)

Sharing was also widely reported to us. As detailed above, access to clean injecting equipment was reported to be difficult and involved a balance between a range of priorities. PWID talked of 'struggling' to get clean injecting equipment. Accounts discussed reuse of friends' needles and syringes, those found in injecting sites, and collecting used needles and syringes from hospital dump sites. Whilst some could rely on pharmacies for access, others struggled, with damaging consequences:

"We just share syringes because the chemists are not there, people refuse to sell them to us you see? We have to share the syringes, so I used to share the syringes with my boyfriend and then I just got positive in that way." (Sara)

Distance to pharmacies, and their opening hours, were also cited as limiting factors.

Accessing clean needles and syringes was also linked to the cost of purchase, which, although relatively low (between Ksh. 10 and 20, equivalent to 0.11 and 0.2 USD) was unaffordable for many who struggled to address basic needs of food and shelter alongside their addiction:

"Now you find that we still share, because yes, you have got some money for the drug, like 250 shillings, the money you have is enough for the drugs, you have nothing for the injection and you do not have the

injection… you see and you want to recover so you will go to a friend and ask him 'bro, help me with yours I want to inject myself then I return it to you'" (Sam)

Sharing was also reported amongst those living with HIV, or those who assumed they were HIV positive. People would share because they were 'already sick' and 'did not care':

"We usually say the only thing left for us is to die…" (Ruth)

For those already living with HIV sharing was considered to pose no additional risk. There were a few people who reported sharing and having been unaware of the risks involved:

'I used to share those needles. You know I didn't know about HIV that can come through that thing. So we used to share, we used to share' (Moosa)

Others described sharing but being selective about whom they shared with to manage HIV risk. PWID would 'look' to see whether others were HIV positive or not:

"I can normally tell one is okay and one is sick" (Solo)

Assumptions about HIV positivity would then shape decisions to share, for example, an assumption that a friend was HIV negative would influence a decision to share. 'Trust' was also associated with sharing, with people who considered other individuals as 'okay' – i.e. not HIV positive.

Accounts after the introduction of NSP

Following the introduction of NSP PWID reported gratefulness for the program, highlighting the positive changes it had made in their experiences. Many PWID reported significant improvements in their access to clean injecting equipment and impacts on sharing practices:

"Yes there have been changes, because now if you use one needle once, you use, you throw it, because you have many"(Susie)

There were even references to the drug using sites being 'flooded' with needles and syringes, and when out walking in the community people would show us the needles and syringes they were carrying.

The NSP reached people through the drop in centres and outreach workers taking supplies to people in the community. An informal secondary exchange by PWID was also reported. Some of the hit doctors, PWID and peddlers would receive the needles and syringes from the outreach projects and distribute these further, sometimes at a small charge, sometimes in an effort to support the hard to reach PWID:

"Yeah, people are not sharing, because even if I go to my friend to tell him help me with your needles he'll tell you 'I'm not giving you my needles, I'll give you this new one'. (Charo)

Despite the availability of free needles and syringes through the programme, some PWID reported still accessing needles and syringes from the pharmacies:

"I: Where are you getting them from at the moment? mainly from the pharmacy?

R: Yeah…Down there.

I: Yeah, what about from the [outreach] project do you get them from there?

R: The problem is I really, really like to get from them but it's so far away… sometimes I don't have money to take a pikipiki, motorbike from here up to there." (Pat)

This relative convenience of pharmacies, despite cost, hints at the limits on delivery of NSP, including the limiting opening hours of the outreach projects, the distance to them, and the difficulty for outreach workers of finding some PWID, as well as interruptions to the supply of clean needles and syringes to the outreach projects.

Gaps and challenges in the supply from the NSP were linked to accounts of continued sharing. The NSP experienced a number of implementation challenges including interrupted delivery, which would result in shortage of needles and syringes:

"Like this week they did not bring for us, so if I have a syringe and I have maybe used it someone will borrow me. I tell them that I have used it but they still want it and I don't have a new one which I can give them to use, but they still insist that I give them the one I have used"(Ruth)

Outreach projects were operating under resource constraints, including sometimes in supplies of clean needles and syringes, with outreach workers having a large number of people to cover,

which would limit the contact times between PWID and outreach workers. The fact that they were also not operational over weekends meant delivery gaps which they attempted to cover for by providing more needles and syringes on Fridays.

There were reports of continued sharing following the introduction of NSP related to PWID living with HIV. As reported above, sharing in the context of HIV status was reported before NSP, and continued, again linked to an experience of hopelessness around HIV:

'R And when you tell them they say we are already dead

I: Right how do you mean?

R Yaani, they tell you they are already dead because they have already get HIV…so they use one needle for three people. (Abraham)

DISCUSSION

Based on our findings PWID in Kenya are reporting the introduction of NSP as leading to significant reductions in needle and syringe sharing. In support of the community surveys indicating reducing needle and syringe sharing (Mutuku et al 2014), these findings demonstrate further that the programme is acceptable and accessible to many. These findings point towards an imminent and immediate need to scale up needle and syringe programmes in Kenya, based on the potential for significant impact on Kenya's HIV epidemic and evidence of increased benefits from delivery at scale and integration with other areas of HIV prevention, such

as HIV treatment and opioid substitution therapy (Strathdee et al 2010; Rhodes, et al 2015).

These qualitative findings however also point to specific challenges and gaps in access to the emerging NSP programme in Kenya. The limits on accessing NSP at weekends indicate a need to explore solutions to this. Outreach projects are already working under considerable resource constraints and additional support would be needed to allow this. The continuing role of private pharmacies as an access point for needles and syringes is another area that could be developed to resolve weekend access, and also to support overall reach (see WHO, 2014; APMG, 2010; Charapkani, Newman, Shunmugan & Dubrow, 2013). Interruptions to the supply for NSP highlights the continued need for attention to logistical, financial and organizational contexts. There is need for continued action to foster enabling attitudes and policy, which would help in addressing these operational challenges.

Continued sharing amongst PWID living with HIV must also be a core target for intervention. That some PLHIV perceive themselves as already 'dead' indicates a hopelessness around HIV status that limits the potential for engaging in preventative measures, including NSP but also other areas of HIV prevention, treatment and care. There is an urgent need to address the understanding and expectations of HIV within a context of addressing barriers to integrated HIV care that includes NSP.

Our findings also demonstrate the active role for PWID in managing HIV risk and taking actions to manage the limits on access to clean needles and syringes. The organic development of PWID in secondary distribution of needles and syringes

is an important area for development to support further access. Such peer distribution is demonstrated in other contexts in supporting access to HIV prevention and care (APMG, 2010). The development of more formal peer distribution in Kenya, linked to the outreach led NSP programme, could be an important avenue to reach more marginalized PWID.

In conclusion, our study is one of the first to qualitatively explore the delivery of NSP in Sub-Saharan Africa and therefore makes a valuable contribution to an emerging focus for policy and programmes. We have shown how PWID report the introduction of NSP leading to significant reductions in the sharing of injecting equipment, supported by other factors such as outreach and continued pharmacy access. Continued sharing is however a challenge and scale-up of NSP in Kenya, with specific attention to operational challenges, the needs of PLHIV, and exploring the role of peer distribution will be essential to confronting the HIV epidemic amongst PLHIV.

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ALCOHOL USE, INTIMATE PARTNER VIOLENCE AND FAMILY WELL-BEING: A QUALITATIVE STUDY IN ORON, NIGERIA

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ABSTRACT

The negative effects of alcohol consumption are felt by other persons, not just the individual drinker. Existing findings suggest that harm to others from drinking are spread across different kinds of social relationships. But there is paucity of information regarding the effects of drinking on members of the drinker's family. This study uses descriptive data from a survey conducted in Oron, Nigeria, to investigate domestic violence as the effect of drinking on family members. Drinking-related domestic violence generalizes the negative consequences of drinking, engenders and aggravates household economic and health problems, and compromises the well-being of the family. The poor socio-economic condition of the affected family constrains their capacity to provide treatment services for the drinker, thereby perpetuating the cycle of drinking, domestic violence and family instability. Men's awareness of the effects of drinking on members of their families provides leverage for policy and action to address harm to families from a member's drinking.

Key Words: Drinking, Domestic Violence, Social harms, Family, Nigeria

INTRODUCTION

Alcohol, an intoxicating chemical substance made from fermented starches, is an intriguing substance of abuse. It is "surrounded with paradoxes, being often recognized as both a stimulant and a depressant, a food and a poison, its use symbolizes an enormous range of both positively and negatively valued things and feelings" (Heath, 1987). Alcohol is embedded in social relations and socio-cultural systems, including factors such as race and ethnicity, health, religion, economics, politics, communication, sex and recreation, social change, criminality, anomie and family disruption (p. 108). It possesses positive values, which

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are reflected in a variety of socio-cultural representations and practices (Jarvinen & Room, 2007). But it also has negative qualities, including its capacity to cause disinhibition and violence. The negative consequences associated with alcohol consumption are of concern to policy makers and public health experts. Until recently, the focus was on the negative consequences of drinking on the individual drinker, particularly on health (Connor, You & Caswell, 2009). But there is growing recognition that alcohol problems do not just affect the individual drinker; they also affect other people and the wider society.

The burden of social harm from drinking is substantial. Alcohol is recognized as a contributory factor in a wide range of social problems, including anti-social behaviour, crime, violence, domestic violence, strained relationships, family breakdown, and child abuse and neglect. A recent report (Alcohol Focus Scotland, 2013) estimates that alcohol misuse costs the Scottish government £97 million per year in social work services and £277 million per year in criminal justice services, including policing. In addition, alcohol is estimated to cost the country £418 million per year in reduced output and productivity, including work-days lost due to alcohol-related absenteeism. In Australia, alcohol consumption exacts a huge financial toll on the relations of drinkers to the tune of $14 billion in out-of-pocket expenses. It also cost them the forgone wages and productivity of the drinker, as well as more than $6 billion in intangible costs (Laslett et. al., 2011). Each year more than 70,000 Australians are the victims of alcohol-related assaults, and 24,000 of those experience domestic violence. About 20,000 children across Australia suffer from alcohol-related child abuse, while the deaths of 367 people and the hospitalization of a further 14,000 people can be attributed to someone else's drinking.

The effect of an individual's drinking on others is not monolithic; it is spread across different kinds of social relationships. Neighbours, friends and colleagues, and other members of the community are affected in various ways and to different extents by others' drinking (Fillmore, 1985; Health and Welfare Canada, 1990). Surveys conducted in the United States and Australia reveal that a sizeable proportion of respondents have been negatively affected by others' drinking (Greenfield et. al., 2009; AIHW, 2008). Members of the drinker's family often bear the brunt of the social harm of alcohol. They experience violence, isolation, shame and financial difficulties (Hurcom, Copello & Orford, 2000). A national survey shows that 21% of heavy drinkers reported domestic problems such as quarrels and fights with family members (Laslett et. al, 2011). These studies, however, present a broad picture of the range and magnitude of the problem, but provide little detailed information on specific forms of harm associated with individual drinking. This kind of information is of the essence in the development of policy and intervention to tackle the problem in local contexts.

The present study is burdened by the need to generate context-specific and policy-relevant information on drinking harm to members of the drinker's family in the Nigerian context. Such undertaking is pertinent in view of the growing rate of alcohol consumption in the country (WHO Global Alcohol Data-base, in Obot, 2006, pp. 20). The study explores men's views on drinking, domestic violence and family life. The research that generated

data for the study was a qualitative survey conducted in Oron, Akwa Ibom State in Nigeria. The study seeks to put into context the ways in which drinking-related domestic violence generalizes the negative consequences of an individual's problem behaviour, engenders and aggravates household economic and health problems, and precipitates decline in the living conditions of the family. It expands current understanding of the impact of alcohol use on family relationships. This understanding can enrich policy and intervention to stem drinking problems and improve the well-being of individuals, families and society.

METHOD

The study was carried out in Oron, Akwa Ibom State, Nigeria. A pre-colonial fishing economy, Oron developed into a major trading centre as imported European goods were traded for palm produce and other items. Oron people are given to heavy drinking (Nelson, 2014), and oral history indicates that local production of alcoholic beverages has a long history in the area. The arrival of western-type alcoholic drinks, beginning from the early days of contact with European traders, also contributed to the rise of culture of problem drinking. The topographical realities of Oron includes its estuarine rivers spiraling along the extreme Gulf of Guinea. The well-shaped promontories and glittering waters form the basis of a fishing economy, has also encouraged heavy drinking. Oron people drink local gin, spirits and imported western liquor to keep warm in this cold habitat. Oron is a patrilineal society. Descent is traced from the male line to an epic male ancestor. Social

organization is based on segmentary lineages, and there are no hierarchical or centralized socio-political structures (Beattie, 1964). There is the minimal lineage (*idip ete*), which may be monogamous or polygamous, minor lineage (*ufok*), and maximal lineage (*ekpuk*). The minimal lineage (nuclear family) includes the man, his wife and children. Social differences are based on age and sex, the latter being the most rigidly defined. The family is the basic unit of social organization. The father figure is primarily a disciplinarian and the culturally acknowledged head of the family (Charles, 2005). Women and children live under the *de facto* control of the husband/father figure.

The specific site of the study was *Akan Obio*, a semi-urban area. The research was designed as a qualitative survey. A multi-stage sampling method was used to select participants. This involved purposive sampling of 6 villages from the community, and clustering of households in the selected villages. Fishbowl sampling was used to identify and enumerate the specific compounds in each of the community from which participants would be drawn. Field workers, adequately trained to collect data, visited the enumerated compounds and conducted in-depth, personal interviews with residents who were within the specified age range (25-45 years). The ethical principles of informed consent, confidentiality and anonymity applied (Fontana & Frey, 1994; Rubin & Babbie, 1997).

The total number of participants was 413 (220 men and 193 women). Interviews were conducted with semi-structured in-depth interview guide, which yielded rich, qualitative data. The data were analyzed descriptively through the use of simple percentages. Focus group

discussions (FGDs) were also conducted with a sub-set of the survey participants (46). Separate FGD sessions where held for men and women (7 participants per session). An audio recorder was used to record the discussions, while a field assistant took notes. FGDs provided space for elaborate discussion on the issues identified by the community survey. Tape records of the discussion were thereafter played and transcribed by the research assistants. The data was analyzed thematically following the data reduction, display and verification procedure (Miles & Huberman, 1994), involving thorough examination of the narratives fitted into analysis matrixes. Themes and patterns emerging from content analysis were noted. The themes where refined by the development of sub-themes and their properties. This process continued until the point of analytic saturation was reached. Key comments are quoted verbatim.

RESULTS

Socio-demographic Characteristics of Participants

Participants were male adults between the ages of 31-45 years. They had an average of 9 years of formal education, which, in the context of the Nigerian educational system, means that most of them did not complete secondary school education. Most participants were married; only a few of them were divorced or separated (7.6%), and none was a widower. Two of the participants whose marriage ended in divorce or separation acknowledged that domestic violence contributed to the problem. The participants where predominantly white collar workers, which refers to a variety of low-level office,

administrative and salaried positions mostly in the civil service. Only a few (10.2%) participants were unemployed. All participants were Christians, mostly of the Methodist church denomination.

Drinking Practices of Oron Men

Drinking of alcoholic beverages is common in Oron. Most of the participants (76.2%) agreed that alcohol use was widespread in their community. Drinking is predominantly a male activity. Women's drinking is rare, and mostly take place in privacy. The dominant pattern of alcohol use is heavy episodic drinking. Participants spoke of drinking six to eight bottles of beer in a single episode of drinking. Other alcoholic beverages such as local gin and imported spirits are also consumed heavily. Participants attributed this pattern of drinking to the social, cultural and geographical realities of their community. One of the participants observed:

We drink a lot of wine in this community because we are fishermen, and we live around the river. The area is usually very cold and we take a lot of hot drinks to keep ourselves warm. We drink very well. It is part of our life-style.

It was observed that traditional ceremonies such as funeral, child naming, wedding and chieftaincy coronation are contributors to the high level of drinking in the area. Similarly, the tepid temperature of the area also disposes the people to heavy drinking. Participants stated that consumption of "hot drinks" helps them to survive the temperature. Drinking of beverages such as liquor, spirits, and local gin distilled from the sap of the palm tree

(popularly known as *ufofob* or *kai-kai*) keeps the body warm, enabling them to survive adverse weather conditions. Alcohol is also related to fishing, the traditional occupation of the people. Apprentices in fishing are required to present a bottle of gin to their tutors. Similarly, gin is used to mollify water spirits (*ndem mmon*) to ensure successful fishing expeditions. A participant told us:

> Our people are fishermen. We live in a riverine area. Since the weather is cold most of the time, we have to find a way to keep warm. This is why our people drink a lot of spirits and wine. We do so to keep warm. It has become part of our culture. Even people who are not fishermen also drink. It is the same in every riverine community.

Participants reported indulging in heavy drinking frequently. It was observed during fieldwork that the people consume various types of alcoholic beverages, including gin, wine, beer and palm wine. Drinking takes place in different social contexts, including home, ceremonies, motels, bars and local drinking joints.

Drinking and Domestic Violence against Women

A significant proportion of the participants (42%) admitted that they had physically abused their spouse in the past, while 21% admitted abusing their spouse within the past week. A small percentage (17%) admitted abusing their spouses verbally and some of them did so frequently. Other participants (12.8%) had denied their spouses feeding money in the past, as a way of checking perceived insubordination. Punching, slapping and kicking were the most common form of violence reported by the participants. A participant confessed:

> I've hit my wife many times in the past. I know I should not, but sometimes you are provoked to do it. Women can be very stubborn such that you are left with no choice than to assert your authority in the home as a man.

Most incidences of spouse abuse took place when the man was under the influence of alcohol. Intoxication with alcohol triggers male violence against their spouses. A sizeable percentage of the participants (42%) stated that they were more likely to be provoked by their spouses' behaviour when they are drunk than when they are sober. They stated that they can hardly control themselves when they are drunk, and therefore usually end up assaulting their spouse. We were told:

> It is drink that makes men beat their wives. Who will just walk into the house and start beating up his wife. You know, men drink. So when a man is drunk, a woman should not go looking for trouble. But some women will still provoke their husbands.

Alcohol is an underlying cause of family violence. Other factors such as traditional notions gender roles are influential. For example, the men became physically aggressive when their spouses came home late, did not take care of the children or left home without their permission. Yet participants noted that the likelihood of aggression was higher when they were intoxicated with alcohol than otherwise. Under the influence of alcohol, contextual

factors provide cues favourable to violent responses.

Effects of Drinking-related Violence on the Family

Participants spoke of the negative consequences of drinking-related violence on the family. They recognized that violence impacts negatively on the socio-economic condition of the family. They also pointed out that domestic violence can jeopardize the economic well-being of a family. This can come about through the huge cost of providing healthcare for the abused spouse. Men who abuse their spouses will spend money to treat them. This will reduce financial resources available for other needs. A participant observed:

If you hit your wife and she is wounded, you will have to take her to the hospital. You know that you will spend money to treat her. So it takes away the small money you would have used to do other things.

Health problems were also identified as the effects of drinking on the family. People who drink are prone to violence, which can lead to all sorts of health issues for themselves, but often for other family members. These include injuries, impairments and disabilities. Participants also stated that violence can cause emotional and mental health problems such as depression and suicidal tendency. Constant threats of abuse could cause a woman undue stress and anxiety. It can also affect her self-esteem and lead to the development of compulsive behaviour such as alcoholism and drug dependence. A participant, who recognized the disproportionate burden of the social harm of drinking on women, had this to say:

Women suffer a lot when a family member drinks. It is worst if the husband is the drinker. Apart from physical abuses, she will suffer emotionally due to frequent threats, shouting and screaming.

Participants agreed that violence has a very negative effect on women's reproductive health, and may be a contributory factor to pregnancy and delivery complications. They regarded this as the most significant harm of drinking on the family. Similarly, marital instability, divorce and parenting problems were also identified as negative effects of drinking on the family. In the words of a participant, 'drinking can lead to the dissolution of a marriage or family'.

DISCUSSION

The study used descriptive data to investigate domestic violence as a negative effect of male drinking on family relationships. The goal was to highlight the implications of problem drinking for policy and intervention. It is clear from the findings presented above that alcohol use and domestic violence are related phenomena. Narrative data indicates that most cases of violence took place when the man was intoxicated with drink. The relationship between alcohol consumption and domestic violence is fairly well established in the literature (see Gondolf, 1995). Studies also suggest that alcohol consumption is an important catalyst for domestic violence and sexual coercion (Cunradi, Caetano & Schafer, 2002). Following Steele and Joseph (1990), the dynamic relationship between alcohol and violence may be explained by the concept

of 'alcohol myopia', a 'drunken excess' that predisposes individuals towards social cues that favour the use of violence, which they would not when they are sober because 'remoter cues and thoughts would pressure (them) to inhibit'. The present study expands our understanding of the dynamic relationship between alcohol consumption and domestic violence. It shows that both practices form part of the social construction of masculinity. Drinking and violence are traditional cultural practices which reinforce masculine identity (Nelson, 2014).

The findings also support the view that the effects of alcohol use are not limited to the drinker; they extend to other people and the larger society. In this regard, the study sharpens understanding of the effects of drinking on the family. Studies show that abuse of alcohol destabilizes families by disrupting cohesiveness (Bennett, 1987). This is supported by the men's accounts to the effect that alcohol use portends negative consequences for the well-being of family members. Alcohol-related domestic violence generalizes the effects of an individual's problem behaviour, engenders and aggravates health, social and economic problems, and compromises the well-being of the family. Furthermore, by constraining the capacity of the family to provide treatment for the drinker, it contributes to the perpetuation family instability. Women are disproportionately affected by men's alcohol consumption. They bear the brunt of domestic violence and economic problems, and are deemed co-dependent in their spouse' drinking problem (Schaef, 1991). Since the effects of alcohol use on the family are gendered, policy and interventions should be designed in a gender-sensitive fashion.

An important insight arising from this study is that men recognize the negative effects of drinking on the well-being of the family. This insight provides critical entry point for policy and intervention. It justifies the need to dialogue with men and engage them in the process of finding effective solution to the problem. Therefore, it is necessary to involve men as participants in the development of policy on alcohol and domestic violence. Furthermore, programmes seeking to alleviate alcohol problems in the family should reflect men's understanding of the dynamic relationship between drinking, violence and family instability and how they may be addressed. This step will not only make programmes evidence-based, but will also promote acceptance and participation among men, which is an important criterion for the success and sustainability of gender-related programmes. It may also be necessary to build their capacity and bolster their commitment the process. Furthermore, treatment involving the whole family may also be necessary not only because family members are variously affected, but also because it has the potential to engender mutual support and sustain commitment to the treatment process. Since women bear the burden of the effects of drinking on the family, it is necessary to ensure that they are targeted for treatment services, including counseling and psychosocial support. This will facilitate the alleviation of their psychological distresses and enhance their capacity to function as care-givers for the family, including the drinker.

CONCLUSION

The understanding that alcohol consumption affects other people, not just

the consumer, is beginning to engage the attention of researchers and policy makers. Informed by the literature on the range and magnitude of harms to others from alcohol use and the need for better understanding of specific social harms of alcohol, this study investigated the ways in which male drinking leads to domestic violence and family problems. The study makes two important observations. First, drinking portends problems not only for the drinker, but also for members of the drinker's family. This implies that drinking is not always functional; it can also be dysfunctional. A related observation here is that, contrary to extant views, the family is not merely the source of drinking problems (Waldron & Slesnick, 1998); it also suffers the effects of drinking. Secondly, the effects of drinking on the family are gendered because women are disproportionately affected. Although these observations are insightful and potentially useful for policy, there is need for better understanding of the ways in which alcohol use poses problems to family (and society) as well as the socio-cultural, economic, gender and health correlates of these problems. This will lead to progressive improvement in policy and intervention to address the social effects of drinking.

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FACTORS AFFECTING THE MANAGEMENT OF SUBSTANCE USE DISORDERS: EVIDENCE FROM SELECTED SERVICE USERS IN BAYELSA STATE

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ABSTRACT

The need for effective substance use management in the Niger Delta region of Nigeria generally, and Bayelsa state in particular, is necessitated by the widespread and often unregulated use of alcohol and other psychoactive substances, leading to high incidence of substance use disorders in the area. This paper explored the various factors militating against the effective management of substance use disorders in Bayelsa state with a view to drawing attention to the issues and, consequently, alleviating the conditions of the affected people through appropriate policies and interventions. In-depth interviews and focus group discussions were conducted with selected service users. Barriers to the management of substance use disorders included the following: perceived high costs of service, accessibility and its associated costs, unavailability of specialized centers and facilities to manage substance use disorders, manpower shortage occasioning unnecessarily long waiting time, attitudinal problems, cultural issues resulting in relapse, perceived stigma, shame and discrimination. Findings of the study highlighted the need for adequate substance abuse management facilities to be put in the state. More professionals, especially psychiatrists and clinical psychologists, are needed to attend to the swelling number of patients presenting with these problems. Relevant policies and intervention should target the underlying socio-cultural issues in order to ensure greater effectiveness of interventions.

Key words: Substance use disorders, Nigeria, Bayelsa State, barriers to drug treatment, treatment policy

INTRODUCTION

Globally, it is estimated that in 2012, some 243 million people corresponding to about 5.2 per cent of the world population aged 15-64 had used an illicit drug at least once in the previous year (United Nations Office on Drugs and Crime:

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UNODC, 2014). Although the extent of illicit drug use among men and women varies from country to country and in terms of the substances used, generally, men are two to three times more likely than women to have used an illicit substance (World Health Organisation: WHO, 1994). While there are varying regional trends in the extent of illicit drug use, overall global prevalence of drug use is considered to be stable. Similarly, the extent of problem drug use, by regular drug users and those with drug use disorders or dependence, also remains stable, at about 27 million people (UNODC, 2014).

Reliable and comprehensive information on the drug situation in Africa is not available. The limited data available suggest, however, that substance use, especially cannabis use of about 12.4%, notably in West and Central Africa is probably higher than the global average of 3.8 per cent (UNODC, 2014). In Nigeria, the expert perception is that there has been a significant increase in the use of cannabis (UNODC, 2012). According to the national survey on alcohol and drug use in Nigeria conducted in 2009 (Neuropsychiatric Hospital: NPH; 2009), aside from alcohol, the non-medical use of tranquillizers had the highest annual prevalence (5.5 per cent) among the population aged 15-64 years. The misuse of prescription opioids was also reported to be high and more prevalent than the use of heroin (3.6 per cent annual prevalence of other opioids, and 2.2 per cent annual prevalence of heroin). High levels of use of other substances were also reported, with annual prevalence as follows: cannabis, 2.6 per cent; amphetamine, 1 per cent; methamphetamine, 1.6 per cent; "ecstasy", 1.7 per cent; cocaine, 1.6 per cent; and crack, 2 per cent.

Substance abuse is a major public health concern globally due to its association with reduced quality of life as well as substance-related morbidity and mortality. Substance use disorders take heavy toll on the patient in terms of personal suffering, to the families as a result of the burden of care and life-time lost productivity, and on the society at large. According to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), substance-related death is the most extreme form of harm that can result from substance use/abuse (EMCDDA, 2009). The United Nations Office on Drugs and Crime (UNODC) estimates that there were 183,000 drug-related deaths in 2012, corresponding to a mortality rate of 40.0 deaths per million persons aged 15-64.

Globally, it is estimated that approximately one in six problem drug users accesses treatment each year (Wang, Aguilar-Gaxiola, Angermeyer, et al, 2007). However, there are large regional disparities, with approximately 1 in 18 problem drug users receiving treatment in Africa, compared with one in five problem drug users receiving treatment in Western and Central Europe, one in four in Oceania, and one in three in North America (World Drug Report: WDR, 2011). In a review of barriers for mental health service use, Leong and Lau (2001) identified four categories of barriers: cognitive, affective, value orientations, and physical. According to them, the first three reflect cultural obstacles that impede an individuals' intent to seek mental health services, and the fourth refers to practical barriers regarding the use of services. The practical barriers include a general lack of mental health awareness, cost of treatment, poor knowledge of how to

access service, and waiting time (Kung, 2004; Leong & Lau, 2001). Researchers (such as Ayorinde, Gureje & Lawal, 2004; Gureje & Alem, 2000; Gureje, Lasebikan, Ephraim-Oluwanuga, Olley & Kola, 2005; Patel, Araya, Chatterjee et al., 2007) have identified many important factors that can affect the utilization and effectiveness of mental health services in Nigeria, such as individual and help-seeking preferences, access, availability, discrimination and stigma, high cost of service, centralised facility, and referral practices among others. Help seeking processes (events that occur between the point of first recognizing a problem (onset of illness), and when the patient enters a mental health service for treatment, as well as sustaining such treatment) have been shown to be particularly germane (Jacobs, Sharam et al., 2007; Saunders & Browersox, 2007).

The need for effective substance use management in the Niger Delta region of Nigeria is necessitated by the widespread and often unregulated use of alcohol and other psychoactive substances, leading to high incidence of substance use disorders in the area. Unfortunately, management of substance use disorders in Nigeria generally and in the Niger Delta region specifically is not well documented. Barriers to effective management of substance-related disorders have also not received adequate empirical attention.

Ayorinde, Gureje & Lawal (2006) and Jacob et al (2007) reported the following mental health index for Nigeria: mental health bed of 0.4 per 100,000 persons; 4 psychiatric nurses per 100, 000 persons; 0.09 psychiatrists per 100, 000 persons; 0.02 clinical psychologists per 100, 000 persons; 0.02 social workers per 100, 000 persons; and a total public

health expenditure of 5% of the country's budget. The figures for substance use disorders (within the mental health system) are better imagined. Furthermore, there are only eight specialised neuro-psychiatric hospitals with substance use disorders treatment units in Nigeria. In addition to these are Psychiatry / Mental Health units in Teaching Hospitals, Federal Medical Centers, and General Hospitals.

The indicators for Bayelsa state are even more worrisome: there is no specialized facility for management of substance use disorders in Bayelsa state. Of the two institutions that provide mental health services in the state (The Psychiatric Department of the Niger Delta University, Okolobiri; and Psychiatric Unit of the Federal Medical Center, Yenagoa), neither has the facility nor the required personnel to effectively manage the enormity of substance use disorders in the state. In addition, there was only one clinical psychologist in the whole of Bayelsa state as at the time of conducting this study. Other mental health professionals such as psychiatrists, psychiatric nurses, social workers, and counsellors are also in short supply in the state. Information about these and other barriers to management of substance use disorders is particularly important in order to address the needs of people with such problems and help shape appropriate advocacy and policy aimed at improving the situation.

This paper explored the various factors militating against the effective management of substance use disorders in Bayelsa state with a view to drawing attention to the issues and, consequently, alleviating the conditions of the affected people through appropriate policies and interventions.

METHOD

Participants and Procedure

The study was carried out in Yenagoa local government area of Bayelsa state. Bayelsa state is a riverine state located in the Niger Delta (south-south region) of Nigeria. The study was designed as a qualitative examination of the various factors that militates against the effective management of substance use disorders in the state, which, incidentally is considered to be one of the hot spots for excessive substance use (especially alcoholic beverages) in Nigeria.

A purposive sample of 48 service users (informal caregivers of patients with substance use disorders) attending two health facilities in Bayelsa state participated in eight focus group discussions (FGDs). In-depth interviews were also conducted among selected professionals: psychiatrists (n = 2), and nurses (n = 2). Of the 48 service users recruited, 36 (75%) were females while 12 (25%) were males. Participants' mean age was 39.1 (SD = 5.63) years. The two psychiatrists were both males while the nurses were females.

Informed consent to participate in the study was obtained from each participant by way of signing a form designed for that purpose. Ethical approval for the study was granted by the relevant bodies. Focus group discussions and in-depth interviews were conducted by the authors using a semi-structured interview guide containing open-ended questions developed by the researcher. The guide was pilot-tested (with selected health service users) in order to gauge its adequacy, comprehension and relevance. Participants were encouraged to discuss and reflect upon their experiences, and questions included

availability of facility, the difficulties/challenges of accessing service and sustaining treatment, barriers relating to perceptions of the disorders and cultural issues. The FGDs provided room for unhindered and extensive discussion of the subject matter. All FGD sessions were tape-recorded, and these were later transcribed by the research team. Data were analysed thematically and the emerging themes were refined but key comments were quoted verbatim, where expedient.

RESULTS

Many factors were found to act as barriers to management of substance use disorders. The various themes are presented below:

Poor knowledge of substance use disorders management facility: Participants were of the views that a major factor militating against the effective management of substance use disorders was poor knowledge of available facility for managing such problems, and the uncertainty about where to go for treatment. Most clients believed that not understanding where to seek professional help interfered with obtaining appropriate treatment for the disorders.

Centralised mental health service: Participants observed that during psychiatric emergencies i.e. relapse or adverse drug reactions where prompt attention was required, they relied on locally available sources for support (spiritual healers) due to the absence of mental health service particularly for those living in rural communities. Participants were of the view that due to their helpless states during crisis periods, they are at the mercy of where ever their family members decide

to take them for treatment. Participants also believed that the proximity of service will enhance treatment outcomes. As opined by a participant:

The government should provide this type of hospital around us at least in every local government area, like in my place there is no hospital like this and that is why it's very difficult to keep the appointments. Let the government come to our aid.

Waiting time: Long waiting time for mental health service at the clinic was mentioned as a significant issue by both caregivers and the professionals, and concerns were expressed regarding the lack of sufficient manpower. A participant complained that:

Whenever you come for clinic appointment you can't do any other thing, in fact the whole day is wasted. By the time you finish with the doctor your ordeal just begins, to get the prescriptions from that place is the greatest headache. Some of us came from very far places, we want to get back on time.

Another participant lamented that the delay had a negative effect on her work as well as her mental health well-being:

The delay makes me anxious because I may not be able to go back to work today. Those of us working should be treated differently I wish we are given urgent attention to enable us go back to work.

Travel distance/transportation: Participants observed that the long journey to access services was cumbersome and costly, and that the lack of money for transport to the hospital meant that they cannot always access the care needed. One of the caregivers reported she could not afford the cost of transporting herself and an ill relative to the hospital for follow-up appointments as required, and that this led to a relapse in the relatives' substance abuse problem.

It is hard to come as the doctor said because of transport. I came by boat from yesterday and spent the night to enable me come early today. It is very hard to come most of the time due to the distance.

High cost of service: Participants felt that their poor financial circumstances resulted to their inability to utilize mental health service. Caregivers suggested that services should be made more affordable or totally free, particularly for the low-income group, to reduce the burden of the illness on their families.

Loss of productive income: Most of the caregivers indicated that accompanying ill relatives for clinic appointments meant that they had to leave their work, trade and vocation, which resulted in loss of income due to their absence from work. A participant lamented that:

the impact of his illness is so much, this illness inconvenience my work and business, right now as I'm here people are calling me on phone to come over for some business issues but right now I cannot go because of him.

Stigma/discrimination: Participants observed that due to the public's negative perception, information about substance

use and mental health disorders were considered too intimate to share with people outside of the nuclear family without attracting stigma. Most participants opined that the belief that mental disorders are retribution for an individual's atrocities makes many families conceal the illness to avoid community gossip and rejection. This hinders appropriate help-seeking behavior of many families. As one of the caregivers observed:

We had to take him away from home since this illness started, so that the community people would not know about his illness. We don't want our enemies to mock us, so it is better to keep him away from them.

Feeling of shame: Caregivers and professionals agreed that one of the factors militating against accessing services by people with substance use disorders is feeling of shame of being seen around the facility for such problems. Psychiatric hospitals were considered to be places for crazy, mad, or spiritually afflicted persons. A participant felt that she:

would love the outpatient clinic to have some little privacy, not to keep everybody in that open hall like that. I feel very shameful when people say all sorts and call you names.

Another observed that the fear of being seen by friends and neighbours makes many service users opt out of treatment.

I feel shameful about my son's illness, especially if we are coming here, I don't want anybody I know to see us. That is why most times it's hard for me to bring him for treatment.

DISCUSSION AND CONCLUSION

The study investigated barriers to effective management of substance use disorders in Bayelsa state. Findings indicate that one of the major barriers to the effective management of substance use disorders is poor knowledge of substance use disorders management facility. The study shows that the public is still only vaguely aware of availability of facility for the management of substance-related disorders specifically and mental disorders generally. Our findings in this regards is consistent with previous findings in Nigeria (e.g. Gureje & Alem, 2000; Gureje et al., 2005) and other low income countries (Patel et al, 2007; Wang et al, 2007). It is necessary for people to know about what services are available and what can be expected from them, as well as identify when to seek professional support.

The centralised mental health system and travel/distance considerations were found to be major challenges to effective management of substance use disorders in Bayelsa state. Bayelsa state is a riverine state where water is the dominant route of transportation. Some of the eight local government areas of Bayelsa state are not accessible by road, and even most of the available roads are not in good conditions. Generally, water transportation takes longer time than air or land transportation. This could be appreciated when the geographical terrain of the state is considered. It is, therefore, apparent that even the few people that had the knowledge of available and effectiveness of substance use disorders treatment facilities would be reluctant in seeking professional help given the centralization of the facilities and the difficulties encountered in accessing them.

Long distances travelled to obtain services and the attendant loss of valuable man-hour that should be used for productive endeavours created barriers for many service users, especially rural dwellers that lack transportation, and who had to take time away from their trade, work or home responsibilities. Consequently, service users may experience financial burden in accessing facility, keeping follow-up appointments and paying for treatment. The need to pay for services results in many individuals being unable to sustain treatment, with very serious implications for the effective management of their conditions. These findings are consistent with previous studies (such as Ayorinde et al., 2004; Gureje et al., 2005; Patel et al., 2007) although these previous findings were on mental health services generally, rather than substance use disorders management which the present study focussed on. Nevertheless, it is our considered view that since most substance use disorders facilities are situated within the mental health facility (most are found in the psychiatric hospitals), it is plausible to relate findings from the two settings.

Another common theme unraveled in the present study was feeling of shame/fear of stigma or discrimination. Given the fatalistic and deeply-rooted cultural interpretations that people attach to substance-related problems (and mental illness generally), people may not seek or sustain treatment due to the fear of that others might think that they are accursed, or have compromised with certain cultural norms or have engaged in sacrilegious behaviours, thus bringing the misfortune upon themselves. Such beliefs are common in Bayelsa state. It is therefore, understandable that service users (or potential service users) would be reluctant in accessing treatment for fear of shame, stigma and discrimination.

In order to enhance the effectiveness of substance use disorders management in Bayelsa state, information about what services are available and where, needs to be widely disseminated to encourage people to seek treatment when the need arises. Services should be expanded and the number of personnel should be increased to assist in the identification, management and prevention of symptoms at all levels of care. The challenges associated with centralised care need to be addressed, specifically the waiting time, geographical access and the cost of services. Social education needs to occur for people to overcome cultural barriers that impact on those with mental disorders and this highlights the need for change in public attitude to support help seeking. In a nutshell, information about service availability and efficacy should be widely disseminated to encourage people to seek treatment; expansion of facility (institutions and personnel) for effective management of substance use disorders should be considered a top priority; the challenges associated with centralised care need to be addressed (specifically, waiting time, access and the cost of services should be reduced to the barest minimum); free or subsidised medication, especially for low-income persons should be considered; culturally-situated psychoeducation could be used to help people overcome cultural and attitudinal barriers associated with substance use disorders as well as to modify public attitude to support help seeking.

To the best of our knowledge, no previous study has investigated the challenges to effective management of substance use disorders in Bayelsa state. As the first

study on the subject matter in this Niger Delta state of Nigeria, where substance use disorders is assuming an increasingly deleterious dimension, our findings have implications that could influence both subsequent research, practice and policy innovations for care.

Caution should, however, be adopted in interpreting and generalizing the findings of this study, especially considering the following limitations of the study. First, the study was a qualitative study and was conducted among selected service users and professionals. Although necessary quality control measures were taken to guarantee high degrees of validity, it is also not impossible that there are other insightful and plausible explanations regarding barriers to effective management of substance use disorders in Bayelsa state. Second, purposive sampling technique was used in selecting participants for the study, coupled with the fact that only service users and few professionals were used. The sample may, therefore, not necessarily typify the overall Bayelsa people. The above-mentioned limitations, however, did not negate the valuable contributions of the study to the body of knowledge on this vital issue.

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FEATURES AND CHALLENGES OF ALCOHOL ABUSE TREATMENT IN UGANDA

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ABSTRACT

Although alcoholic beverages have existed for long in traditional societies in Africa, across the continent, recent studies that categorize the majority of drinkers to be among those with risky drinking patterns depict rampant alcohol abuse. This paper reviews various reports on alcohol misuse in the sub-Saharan Africa (SSA) in general and highlights negative alcohol related consequences in Uganda. The article further describes approach, components and setting of alcohol abuse treatment. The authors highlight the role of AA in shaping treatment and notes dominancy of the Minnesota model which combines the 12 steps program with pharmacological and psychosocial approaches. The Hazelden based strategy emphasises abstinence from all mood altering drugs in the residential setting and professional set up although the mainstream health facilities do not provide more than detoxification. Nevertheless, the implementation of treatment in Uganda appears to be a 'cut and paste' of the American model without prior research which challenges application in the local context. Challenges of the Minnesota model not withstanding treatment providers are faced with inadequate skills and facilities rendering them unable to meet the ever increasing demand. Research into culturally adopted treatment intervention strategies is necessary to enhance the effectiveness and treatment of alcohol abuse in Uganda.

Key words: Alcohol abuse, addiction treatment, Uganda, alcohol dependence, sub-Saharan Africa

INTRODUCTION

Although alcohol consumption has existed for long across the African continent (Pan, 1975), the World Health Organization (WHO, 2004; 2011; 2014) has shown alarming consumption trends in the Sub-Saharan region. Uganda is listed as one of the countries with the largest proportion of hazardous drinkers

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due to the high prevalence of risky alcohol consumption patterns such as drinking to intoxication, binge drinking and underage alcohol abuse (Swahn; 2014; WHO, 2004; 2011; 2014). The last three decades have been marked with high consumption rates to the extent that in 2004, the country's per capita consumption of pure alcohol (19.8 liters) was declared the highest globally (World Health Organization (WHO, 2004). However, findings on the latest levels of alcohol consumption per capita are contradictory. Whereas in 2014, the WHO report indicated a reduced rate of 9.8 liters, small scale surveys reveal an alcohol consumption level of 23.7 liters and list Uganda as the number one in Africa and the 8th globally (WHO, 2014; Neild, 2013; Hahn, 2014). The alcohol consumption level in Uganda is alarming and significantly higher than the average consumption levels in Africa (WHO, 2014).

For a long time, alcohol had a distinguished place in the religious and symbolic sphere as well as the social, economic and interpersonal domains (Pietilä, 2002; Kalema, Vindevogel, Baguma, Derluyn & Vanderplasschen, 2015). The drinking culture in Sub-Saharan Africa (SSA) changed significantly in the 19th century with the colonization and following commercialization of alcohol, which was accompanied by a deterioration of alcohol-related problems (Adelekan, 2008; Pan, 1975). Alcohol-related problems further increased in the post-colonial era (from the 1950s onwards), as the newly appointed governments expanded the industrial alcohol production and sale instead of controlling it (Adelekan, 2008; Dumbili, 2014). Several researchers have associated increased problem drinking and drunkenness with inadequate legislation, massive production and indis-

criminate marketing of alcohol targeted at, for example, young people of 13 - 15 years (Jernigan & Obot, 2006; Swahn, 2013). Also, eroding socio-cultural norms contributed to the alcohol epidemic, as African traditions restricted drinking depending on the circumstances and socio-economic status of persons, while typical values such as communal living and sharing responsibility prevented alcohol misuse (Adelekan, 2008; Carlson, 1992).

Numerous studies have shown a correlation between alcohol abuse and adverse societal effects (Jernigan, 2014). Alcohol is ranked third among the leading global risks for burden of disease as measured in disability-adjusted life years (DALYs), after underweight and unsafe sex (WHO, 2009). In Uganda, however, the burden of disease is greater since alcohol is the second (after tobacco) risk factor for poor health and premature death (WHO, 2014) and a catalyst of other social problems such as interpersonal violence, HIV/AIDS, traffic accidents, and self-harm (Abushedde, 2013; Graham, Bernards, Knibbe, Kairouz, Kuntsche, Wilsnack, et al.2011). The challenges posed by alcohol abuse in Uganda create dire need of policy regulations and adequate interventions. This paper builds on a recently published article on the alcohol abuse and policy and treatment responses in SSA. (Kalema, Vindevogel, Baguma, Derluyn & Vanderplasschen, 2015) to describe the features of alcohol treatment in Uganda. The paper further focuses on the challenges the sector is facing and concludes by highlighting research into culturally adapted treatment programs as one of the recommendations to deal with the glaring treatment needs in Uganda and other SSA countries. In this paper, we use the term 'alcohol abuse' to refer to chronic or periodic drinking characterized

by impaired control over drinking, frequent episodes of intoxication, preoccupation with alcohol and the use of alcohol despite adverse consequences (American Psychiatric Association, 2000).

Features of alcohol abuse treatment in Uganda

Alcohol treatment centers are defined as specialized centers, supporting persons with alcohol abuse problems towards recovery and can be based within units that are medical or non-medical, governmental or non-governmental and public or private (Vanderplasschen, 2004). Understanding specialized substance abuse treatment systems is a challenging task, as there is no univocal definition of treatment nor a standard terminology that describes different elements of treatment (Sullivan & Fleming, 1997). The situation becomes even more complex in contemporary settings where treatment protocols change regularly as service providers start to implement tailor-made programs to meet the dynamic individual needs of patients. To explore typical features of alcohol treatment in Uganda, this paper examines three closely interrelated dimensions of treatment, namely the approach, setting and components (Landry, 1996; WHO, 2010). Under treatment approach, we elaborate the underlying philosophical principles that guide the type of support that is offered and that influence admission and discharge policies as well as expected treatment outcomes, attitudes toward patient behaviour, and staff composition. Regarding the treatment setting and components, we scan the environment in which treatment is delivered and the specific clinical interventions and services that are offered to meet individuals' needs respectively.

Treatment approach

Specialized residential treatment initiatives in Uganda evolved out of the Alcoholic Anonymous (AA) work that was started in the 1980s by American missionaries (Gelinas, 1990). Owing to the training that pioneer professionals received from South Bend in the United States, the Minnesota model of chemical dependency treatment became the predominant treatment approach in residential treatment settings Uganda. It consists of public as well as private treatment facilities, mostly modelled after the fixed-length inpatient rehabilitation programs with its roots in the Hazelden Foundation and Johnson Institute (Sullivan & Fleming, 1997). Its philosophy goes back to the the 19th century, when the medical profession described alcoholism as a disease, characterized by altered brain structure and functions due to genetic and physiological causes (McDougall, 1989; Mc-Kim & Hancock, 1997; Sadock & Sadock, 2002). This notion emphasised that alcohol abusers were not in control of their behaviour, that they primarily needed treatment and hence was the start of the medical management of alcoholism (Sullivan & Fleming, 1997). In the 1930s, this approach was widely promoted (especially in the US) by the AA groups led by Wilson and Bill, who were themselves physicians and had overcome protracted struggles with alcohol (Alcoholics Anonymous, 2001). Treatment facilities hence subscribe the 12 steps AA orientation as a major tool for recovery and relapse prevention with varying intensities of aftercare support. Pharmacological interventions are used, particularly for detoxification and the treatment of co-occurring disorders (most treatment centres also have detoxification units and admit

patients who do not want to go through the hospital system). Although the Minnesota Model initially required 28 to 30 days of inpatient treatment followed by extensive community-based aftercare services (Sullivan & Fleming, 1997), residential treatment programs in Uganda usually last for 90 days due to difficulties in providing aftercare follow-up sessions after the residential phase. Clients who are - for various reasons - unable to afford residential treatment or those participating in aftercare services are offered non-residential or outpatient program. The Out patients system requires reporting to treatment centres on weekly basis for a period of 4 months but the frequency diminishes with time if the client progresses well.

Due to the hybrid nature of the Minnesota model, a combination of professionals mainly psychologists and psychiatrists (WHO, 2010) is supplemented by general practitioners, social workers and spiritual animators to meet clients' needs. The medical staff is responsible for the assessment and diagnosis and pharmacological therapy of alcohol and any co-occurring disorders such as delirium tremens, schizophrenia, and mood and anxiety disorders. The psychotherapy staff consists of counsellors and social workers, some of them who benefited themselves from a recovery program (e.g. AA members), use behavioural approaches as a major tool to help clients to understand and deal with the nature of their problems. Unlike in hospitals, service users are referred to as clients and are expected to take an active role during the psychosocial activities during their treatment. While each individual will have specific long- and short-term goals, abstinence is always emphasized given its strong association with positive

long-term outcomes (Sullivan & Fleming, 1997; McKay & Hiller-Sturmhöfel, 2011). Lapses or slips (occasionaland usually temporal alcohol drinking episodes) are recognised as part of the recovery process and used to draw lessons to prevent future relapse. No differentiation is made regarding the treatment of clients with various backgrounds (e.g. age, gender, …) and types of addictions are treated in the same facilities (Amanya, 2011; Kalema, 2008). Individuals are usually referred to treatment by mainstream health care facilities which are usually the first and most frequently contacted places by persons with alcohol-related health complications. Although some law enforcing institutions like the police refer people for rehabilitation, there is no diversion of offenders from the criminal justice to treatment system, e.g. for driving under the influence of alcohol.

Treatment setting

Basically, two treatment systems coexist (traditional health care services and treatment/rehabilitation centers), with a varying prevalence throughout the country. Also, traditional healers commonly claim to treat alcoholism (Kalema, Vindevogel, Baguma, Derluyn & Vanderplasschen, 2015). Approximately 60% of the population seek care from them (Ministry of Health, 2010a). They are known to offer brief counselling to clients and support them with herbs of which some work as anti-abuse medication. However, traditional healers' operations and practices are hardly documented and therefore, this aspect is not dealt with in this paper. On the side of mainstream health care, Uganda counts 2,855 health care units, including 105 hospitals for a total population of 35.6 million inhabitants. Hospitals

are staffed by the public and private sector. Although some government hospitals and NGOs offer outpatient treatment in mental health care centres (WHO, 2010), the majority of persons who undergo detoxification are referred to residential centers (Ministry of Health, 2010b). Primary health care units (PHC) essentially provide inpatient hospitalization to persons with alcohol use disorders during the acute intoxication phase; they manage detoxification and other medical needs of patients, usually for a short period of time (Hammerstedt, Chamberlain, Nelson, & Bisanzo, 2011; Ministry of Health, 2010b; WHO, 2010), and refer psychiatric crises to regional referral hospitals (n=11). These psychiatric units are supposed to treat severe alcoholism, and psychiatric co-morbidity (Ministry of Health, 2010b).

Uganda has only one public alcohol and drug unit found in the Butabika national psychiatric referral hospital. Other specialised rehabilitation services are provided by 7 centres (for example Hope and Beyond), mainly concentrated in the capital city of Kampala. In residential treatment centres, clients are offered various psychosocial activities and are kept in settings that limit their contacts with the external environment to restrict access to alcohol. Since alcohol addiction is regarded an immediate consequence of the availability of alcohol and the related conditioning process (pharmacological model), alcohol is banned in places of rehabilitation. Self-help groups like AA for clients and Al Anon for their relatives are invited to provide mutual support and encourage abstinence during and after formal treatment.

Treatment components

Specialized treatment programs integrate biological, psychological, social, and spiritual elements (a bio-psychosocial spiritual model). Psychological, psychiatric and medical assessments are performed at the beginning of and during treatment to determine clients' treatment needs and health risks. The main alcohol abuse screening tool is the "AA-12 Questions index for alcohol dependency" which indicates alcohol abuse in case of a score equal to or above 4 (AA World Services, 1973). The other common assessment tool is the CAGE questionnaire (Ewing, 1984) which puts 80% chances of alcoholism on a respondent with one score. Pharmacological interventions are used, particularly for supporting detoxification and treatment of co-occurring disorders. The government has set guidelines for the screening and management of acute and chronic alcohol poisoning in health centres (Ministry of Health, 2010b; WHO, 2010). These guidelines included the application of four classes of drugs: anti-craving, antipsychotics, antidipsotropics and others for the common illnesses. Anti-craving medication is commonly used such as benzodiazepines (diazepam, clonazepam) and Chlorpromazine to suppress withdrawal symptoms and block or reduce euphoric feelings. While antipsychotics such as Olanzapine and Risperidone are prescribed to improve clients' psychological state and to treat those presenting with comorbid psychiatric disorders, antidipsotropic drugs like Disulfiram (Antabuse) are prescribed to a limited extent for relapse prevention (Gary, Ogborne, Leigh, & Adam, 1999; Ministry of Health, 2010b; WHO, 2010). Alcohol treatment centres are also stocked with other drugs to manage general health concerns of clients during treatment.

Psychosocial activities constitute the bulk of treatment interventions in the

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rehabilitation centres. Clients who have stabilised after detoxification are exposed to a variety of cognitive behavioural therapies (CBT) with the purpose of changing their lifestyle (values, attitudes and behaviours) to support non-drinking habits. The overall goal of the activities is to teach new behaviours and cognitions that allow old habits to be controlled by new learning. These CBT activities are based on the AA-12 steps recovery program which are intended to change clients' lifestyle through self-monitoring and peer support (building new relationships with alcohol-free friends), substitute alcohol with new recreational activities and reward abstinence (Amanya, 2011; Kalema, 2008; Sullivan & Fleming, 1997). The AA 12-step orientation is hence used as a major tool for recovery and relapse prevention. Each client gets a buddy (sponsor), usually an experienced AA member with whom to work through the 12 steps recovery program. Participation in daily in-house and weekly general AA meetings is encouraged for residents and discharged clients, as the backbone of treatment and major form of continuing care respectively.

One of the major strategies for change is education about chemical dependency provided through lectures, readings, and publications to help clients and designated others understand the diagnosis and effects of alcohol. Education emphasizes the benefits of treatment and touches upon numerous other substance abuse related topics, which also includes the teaching of new coping skills and cognitive restructuring (Kirk et al., 1989) all directed at enforcing self-control. Through educational sessions, clients are taught to recognize high-risk situations or emotional "triggers" that induce alcohol (ab) use and how to cope with craving and informed on developing contingency plans for handling stressful situations (Amanya, 2011; Kalema, 2008; Sullivan & Fleming, 1997). Individual and group therapy are important components, as well as the involvement of the family in treatment planning and aftercare. As part of individual counselling, a therapist is assigned to each individual client to give them and their social network confidence and trust in recovery. This is particularly important in the early stages of treatment to prevent dropout and encourage participation. As treatment progresses, clients are introduced to group therapy to experience closeness, share experiences, communicate feelings and build mutual support. The discussions often extend beyond alcohol-related topics to include other issues affecting clients as they emerge (Sullivan & Fleming, 1997). Through individual, group and family sessions, therapists revisit cognitive processes that lead to maladaptive behaviour, intervene in the chain of events that lead to alcohol abuse and promote and reinforce necessary skills and behaviours for achieving and maintaining abstinence. Family therapy focuses on alcohol use behaviour of clients in relation to the maladaptive patterns of family interaction and communication. Family members are stimulated to help ensure compliance to the treatment plan and monitor abstinence.

Finally, life skills, livelihood skills and spiritual programs are offered to supplement the above-mentioned therapies. Under life skills programs, clients are supported through self-awareness/help skills like stress management/relaxation techniques and interpersonal and decision making sessions to empower them with skills to sustain a sober life. Purposeful recreational activities in the form of

games, sports and peer entertainment through creative art and occasional picnics are as well designed to give a therapeutic and relaxation effect to the clients. Livelihood skills, also known as occupational therapy, provide clients with hands on/entrepreneurial skills such as craft making, gardening and animal husbandry. Spiritual care services which include daily devotions, meditation and prayers and routine retreats are intended to deepen clients' faith values and help them to overcome their deficits. Proponents of the moral model of addiction allege that in order to sustain their addiction, alcohol abusers adopt a dysfunctional lifestyle characterized by dishonesty, selfishness, isolation and blame which eventually leads to feelings of loss, despair and suicide that can only be relieved by the re-establishment of a deep-seated sense of belonging, meaning and purpose in life (Alcoholics Anonymous, 2001; Sullivan & Fleming, 1997). Like the rest of the activities, the most commonly practiced type of spirituality is that of the 12 steps, which emphasizes the 'Higher Power' concept of God-the way he is understood by the client. Depending on the orientation of the treatment centres, some clients are helped to perform preferred religious practices to strengthen their conviction.

Treatment challenges

The challenges for alcohol abuse treatment services in Uganda are enormous, ranging from human resource capital over infrastructural and logistic limitations to treatment and quality of care-related issues (Kalema, Vindevogel, Baguma, Derluyn & Vanderplasschen, 2015). First and foremost, the Minnesota model that is being used has been invariably criticised for focusing on addiction as an incurable disease and regarding addicts as people with pathological personalities, hence restricting treatment to a particular aspect rather than addressing clients as a holistic and complex individual. In the model, therapists control and confront clients whose disloyalty to the program is regarded as 'denial' (Thompson, 2007). Furthermore, the model is said to ignore other significant elements of recovery, such as clients wellbeing by measuring success solely based on abstinence from all mood-altering substances. Even the use of prescribed mood-altering drugs is regarded as relapse. Also, high rates of treatment drop-out are reported due to this stringent approach and long duration of the program (Huebner & Kantor, 2011).

The shortcomings of the Minnesota model notwithstanding, many health professionals lack the skills to effectively assess and treat patients with alcohol use disorders (Kalema, Vindevogel, Baguma, Derluyn & Vanderplasschen, 2015). A study in PHC settings in Kampala showed that only 7% of all admitted patients were asked about their alcohol use by health care professionals (Kullgren et al., 2009). Yet, **specialized** treatment is only publicly available at the National psychiatric Referral (Butabika) hospital, which has a bed capacity of 30 patients (Kigozi, 2005). Moreover, planning public alcohol treatment in mental health care institutions discourages many alcoholics from seeking treatment due to the stigma associated with mental disorders (Sullivan & Fleming, 1997). The alternative private treatment initiatives, are mainly concentrated in central Uganda and hardly accessible and affordable for the majority of Ugandans due to the relatively high costs (around 15 EUR per day) (Kigozi, 2005). Another inadequacy stems from

the limited variation in intervention techniques, which are mainly based on hospitalization and general residential rehabilitation. Also, no specific interventions are available for special needs groups such as prisoners, adolescents, and women. The combination of the above-mentioned factors, hinder alcohol treatment in Uganda and lead to the eventual neglect of the needs of the vast majority of excessive drinkers, since less than 20% of the deserving population receives treatment at some point (WHO, 2010).

Towards culturally adapted treatment programs for alcohol misusers in Uganda

Although the prevalence of alcohol problems is high, available treatment initiatives are not properly constituted or guided, resulting in low detection and treatment participation rates. Alcohol misuse and its treatment are relatively new concepts in Uganda, only dating 10 to 20 years back. Based on the history of alcohol treatment, it appears that no prior preparations and baseline information was collected to plan and address the needs of potential service users in alcohol abuse rehabilitation centres.

The currently adopted Minnesota model has documented limitations and is compounded by other structural problems (see above). It is against this background that a research project has been initiated by the universities of Ghent (Belgium) and Makerere (Kampala, Uganda) to evaluate the existing treatment programs for alcohol abusers and to develop appropriate, culturally sensitive interventions for this population. Besides a review of the available literature on alcohol abuse and treatment interventions in SSA, the study compares service users' and treatment providers' perspectives on alcohol problems, its treatment and recovery. This comparison is based on qualitative interviews in Uganda and a country with a much longer tradition of treating alcohol problems (Belgium). The study further examines the characteristics of alcohol abusers entering treatment in Uganda and monitors their evolution over a 12-month period. In particular, personal and social aspects contributing to recovery and improved quality of life are assessed. Successful cases will be profiled to document key factors supporting successful recovery from alcohol abuse. Empirical evidence resulting from this study will allow to inform policy-makers on good practices for the treatment of emerging alcohol problems in Uganda and neighbouring countries. The characteristics and needs of alcohol abusers entering specialized treatment will further help to develop interventions that are better targeted to service users' needs. Also, the expected outcomes of such interventions will be documented as well as pathways to recovery and the reintegration of former alcohol abusers. The study may further provide a justification for the resources allocated to alcohol treatment and bring about insights for the development of a comprehensive alcohol treatment policy in Uganda. In addition, the description of specific recommendations, program components and concrete tools for practitioners will enhance the development of good practices and capacitate professionals to deal with this major public health problem in an appropriate way.

CONCLUSION

Although the majority of people who meet the criteria for alcohol abuse do

not seek formal treatment (Colpaert, De Maeyer, Broekaert, & Vanderplasschen, 2013), research has demonstrated that alcohol treatment plays a significant role in reduced alcohol-related problems (Welch, Rettammel, & Moberg, 2002). Despite the severe negative consequences of excessive drinking, individuals with alcohol abuse problems face the challenge of limited access to treatment resources. Given the substantial alcohol abuse problems and the global lack of information on alcohol treatment (WHO, 2007), it is important to document the various ways treatment is practiced in Uganda. Since treatment of alcoholism is among the global strategies to prevent harmful use of alcohol (WHO, 2008), evidence-based approaches form an important foundation for organising alcohol treatment programs not only in Uganda, but in the whole Sub-Saharan region. Scientific research is well needed to assess the cultural appropriateness of available practices and interventions and to support the implementation of culturally sensitive interventions and policies.

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SUBSTANCE USE LITERACY: IMPLICATIONS FOR HIV MEDICATION ADHERENCE AND ADDICTION SEVERITY AMONG SUBSTANCE USERS

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ABSTRACT

This cross sectional study examined the relationship between substance use literacy and HIV medication adherence and whether severity of addiction modified this relationship. 179 HIV infected substance users completed the Questionnaire Assessment of Literacy in Mental Health, Addiction Severity Test, and Morisky Medication Adherence Scale. Most respondents wrongly identified the alcohol use vignette problem as stress (50.3%). Not recognizing that there was a problem was significantly correlated with moderate adherence (P = 0.003). Preference was given to informal sources of help such as a close friend (83.2%, P = 0.050), as well as psychosocial forms of management like physical exercise (79.9%, P = 0.007) rather than professionals such as psychiatrists (58.1%) which was associated with moderate adherence and low addiction severity. Substance use literacy was found to be a significant variable in increasing HIV medication adherence and decreasing addiction severity.

Key words: Substance use literacy, Substance use, HIV medication adherence, Addiction severity modifier

INTRODUCTION

Low substance use literacy, defined as low ability to self-recognize, manage and prevent substance use disorders, renders people who are at risk of substance use disorders susceptible to unhealthy and counterproductive decisions (Loureiro et al., 2013). Substance users may not be able to manage their ailments if they lack accurate information, understanding, and managing prerequisites for preventing severe consequences. In Kenya, this has been demonstrated in Rift Valley, with high rates of alcohol abuse (15.7%), and low alcohol abuse awareness rate (50.3%)

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(NACADA, 2012). A similar association has also been found for other drugs such as bhang and cocaine (NACADA, 2012). This inverted relationship could explain the high rates of none-adherence to HIV medication, as studies have shown that substance use is linked to HIV risk and poor adherence (Assefa, Damen, & Alemayehu, 2005; Nicholas et al., 2014).

Substance use literacy is low among substance users (Loureiro et al., 2013) but poorly understood with regard to medication adherence. Some studies have shown no significant relationship between adherence and general health literacy (Gazmararian et al., 2006; Paasche-Orlow et al., 2006), while others have shown that low health literacy is indeed associated with decreased HIV medication adherence (EL, 2013; Waite, Paasche-Orlow, Rintamaki, Davis, & Wolf, 2008). However, these studies have not measured components of health related to substance use literacy. One study examining adherence to HIV medication among patients with a history of alcohol use found no significant relationship (Paasche-Orlow et al., 2006) and the same was found among adolescents currently consuming alcohol (Murphy et al., 2010). Moreover, these studies have used measures such as the Short Test of Functional Health Literacy in Adults (S-TOFHLA), which do not capture the substance use literacy components(Gazmararian et al. 2006, Waite et al., 2008). It is largely unknown if substance use literacy impacts HIV medication adherence.

Findings from studies incorporating addiction severity have also been mixed. In one study addiction severity and literacy had no significant association (Lincoln et al., 2006), while in another the likelihood of none-adherence increased with

severity of addiction ranging from problem drinking, harmful drinking and eventually dependent drinking (Nuwagaba-Biribonwoha et al., 2012).

Substance use literacy may be a modifiable risk factor whose intervention can improve the management of substance use disorders and medical adherence. With this in mind, we measured substance use literacy in a group of HIV positive adults in Naivasha District Hospital's Comprehensive Care Center in Kenya. We looked for relationships between severe and moderate addiction and substance use literacy. We also measured adherence to medication regimen as well as links between substance use literacy and medication adherence.

METHOD

Participants

In this cross sectional descriptive study, we purposively recruited English-literate, HIV-positive patients attending the Comprehensive Care Center in Naivasha District Hospital aged 18 years and above with a self-reported history of substance use. Purposive sampling was used so as to get only those who met the substance use criteria.

Ethics

The study was reviewed by the Kenyatta National Hospital and University of Nairobi Ethical Review Committee, and the respondents gave written informed consent.

Measures

Addiction Severity Index self report test (ASI-SF) drug and alcohol subset. This instrument, which has been used in Kenya

(Ong'any, 2004), has been found to have high inter-rater reliability ranging from .84 for alcohol to .69 for drug addiction, as well as high Cronbach's alpha, which ranged from .78 for alcohol to .68 for drug addiction (Marcus & Zgierska, 2013). In this study, we used the drug and alcohol subset which asks individuals the number of days in the past 30 days on which they have consumed alcohol, drunk to intoxication, and used a number of specified drugs, as well as the perceived severity of alcohol- and drug-related problems. The drug subset has been found to have a high correlation of 0.61 with the Short Index of Problems-Drugs (SIP-D), while the alcohol subset had a correlation of 0.68 when compared with the SIP for alcohol consequences (Cacciola, Alterman, Habing, & McLellan, 2011). These findings indicate that the ASI was capable of accurately assessing the current severity of drug and alcohol problems. In the current project, we used composite scores which ranged from 0 for no symptoms to 1.0 for high severity. Scores were categorized into no addiction (score = 0), slight addiction (score = 0.1-0.25), moderate addiction (score = 0.26-0.5), considerable addiction (score = 0.51-0.75) and severe addiction (score = 0.76-1).

Questionnaire Assessment of Literacy in Mental Health (QuALiSMental) substance use vignette. The QuALiSMental has been used by Loureiro et al. (2013) in a similar study among the Portuguese. The instrument assesses the level of mental health literacy in five domains, which are explored using a disorder vignette with DSM-IV-TR full criteria symptoms. In this study we used the substance use vignette below.

Jorge is a 25 year old who attends college. Last year he began drinking alcohol and got drunk at all the parties / gatherings that he was at. His parents worried because Jorge had declining academic performance, was missing classes due to hangovers, and was having his parents called to college because he was appearing intoxicated in class. At the last party, friends called a nearby hospital because he was unconscious.

The five domains include disorder recognition; recognition of professional help and available treatments; recognition of the effectiveness of self-help strategies; knowledge and skills to provide support and first aid to others; and knowledge of how to prevent mental disorders. The instrument is a quantitative measure; scoring is based on how correctly and knowledgeably the participant responds to the components' questions. For example, one of the questions in the disorder recognition vignette is "In your opinion, what is going on with Jorge?" to which the respondent is given several options from which to choose. Though standardization and validation studies are yet to be done on the substance use vignette, in the depression vignette a high level of inter-rater reliability was found, with a kappa coefficient of 0.94, and construct validity being revealed as the mean score tended to increase from 11.44 (SD – 3.23) during pre-training period to 15.86 (SD = 2.63) during post training period (Kelly et al., 2011). This showed that there was a significant association between the vignette questions and the responses, which yielded theoretical support.

Morisky Medication Adherence Scale (MMAS). This 8-item instrument has already been used in Kenya (Kubo, 2013) and has shown strong reliability and

validity, with Cronbach's alpha of 0.72 to 0.83 (Gupta & Goren, 2013). It has also shown content validity in measuring adherence to various forms of medication including Antiretroviral drugs. An example of a question is "Do you sometimes forget to take your medicine?" The instrument responses were coded as either 1 for Yes responses or 0 for No responses and then summed. Higher scores reflect lower levels of medication adherence. Cut off points categorized individuals into low (above 2 score), medium (1-2 score) or high (0 score) adherence.

Procedure

Respondents who scored 3 and above on the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) questionnaire were purposively selected(Ali & Humeniuk, 2006). On signing the informed consent, 200 participants self-administered the tools starting with the researcher-designed demographic questionnaire, Addiction Severity Index self report test (ASI-SF) drug and alcohol subset, Questionnaire Assessment of Literacy in Mental Health (QuALiSMental) substance use vignette, and the 8-item Morisky Medication Adherence Scale (MMAS).

Data Analysis Plan

Descriptive statistics and bi-variate correlations were done for the demographic characteristics using SPSS version 20. Substance use literacy was analyzed with regard to questions categorized into the five components in the QuALiSMental. In addition, statistically significant associations between substance use literacy and adherence, as well as substance use literacy and severity of addiction, were analyzed using Chi-square calculations.

RESULT

Of the 200 questionnaires filled, 21 were excluded because they were incomplete. Of the 179 (97% response rate) respondents who fully participated in the study, most were aged 34 – 41 years (27.4%) and 50.3% of them were females. A majority had a history of substance use consisting of more than a year (63.1%). The substance most often used was alcohol (94.4%). The level of education of most of them was primary school (52.5%). Most respondents had moderate adherence (43%) and had no evidence of addiction (57%) as evident in the Addiction Severity Inventory cut off scores (See Table 1 at the bottom).

Substance Use Literacy

Alcohol Abuse Recognition. Fewer than half of the respondents were able to accurately recognize the alcohol use problem in the vignette; they misperceived it as stress (50.3%) and depression (43.6%). Forty point eight percent (40.8%) accurately perceived it as alcoholism and 42.5% as substance abuse (e.g. alcohol). Other options chosen that later on became significant in the study included bulimia 7(3.9%), nothing wrong 14(7.8%) and nervous breakdown 19(10.6%).

Recognition of Professional Help and Available Treatment. Of the 159 (88.8%) respondents that reported that they would seek help, some would prefer to seek help from a health care professional (36.9%), mother (32.4%), or friend (19.6%) while less than 12% of them would choose father, teacher, and girlfriend/boyfriend (10.6%). 0.6% did not respond. Having a negative opinion (57.5%) and thinking that the treatment would have negative side effects (17.9%) were reported as

Table 1. Socio-Demographic, Substance Use, Adherence and Addiction Severity Profiles

	Frequency/ Percent (N/%)
Gender	
Male	88(49.2%)
Female	90(50.3%)
No Response	1(0.6%)
Age	
18 to 25yrs	12(6.7%)
26-to 33 yrs	35(19.6%)
34 to 41yrs	49(27.4%)
42 to 49 yrs	38(21.2%)
50 to 57yrs	12(6.7%)
58 yrs & above	9(5.0%)
No Response	24(13.4%)
Education Background	
None	11(6.1%)
Primary	94(52.5%)
Secondary	64(35.8%)
University (U-Graduate)	9(5.0%)
University (Masters)	1(0.6%)
Duration of Substance Use	
Days	31(17.3%)
Months	28(15.6%)
Years	113(63.1%)
No Response	7(3.9%)
Income (Kshs.)	
0-9,999	128(71.5%)
10,000-19,999	18(10.1%)
20,000-29,999	9(5.0%)
30,000-39,999	2(1.1%)
40,000 & above	1(0.6%)
No Response	21(11.7%)
Occupation	
Unemployed	45(25.1%)
Employed	59(33.0%)
Self employed	66(36.9%)
Others	6(3.4%)
No Response	3(1.7%)
Substance Used	
Tobacco products	89(49.7%)
Alcoholic Beverages	169(94.4%)
Cannabis	12(6.7%)
Cocaine	5(2.8%)
Amphetamine Type Stimulant	35(19.6%)
Inhalants	6(3.4%)
Sedatives /Sleeping Pills	3(1.7%)
Hallucinogens	1(6.6%)
Opioids	2(1.1%)
Others	4(2.2%)
Adherence	
Low Adherence	33(18.4%)
Medium Adherence	77 (43.0%)
High Adherence	69 (38.5%)
Addiction Severity	
No Addiction	102 (57.0%)
Slight Addiction	13 (7.3%)
Moderate Addiction	27 (15.1%)
Considerable Addiction	16 (8.9%)
Severe Addiction	21 (11.7%)

some of the barriers to seeking help. The respondents felt that they would be more at ease talking to their mothers (59.2%) if they had a problem similar to the vignette. The professionals that would be preferred were a family doctor (86.6%), psychologist (73.2%), and a psychiatrist (58.1%) among others. A close friend, although not a professional, was perceived by respondents as a professional (83.2%). Preferential treatment selected included vitamins (87.7%), antipsychotics (29.1%), and antidepressants (29.6%).

Recognition of Effective Self-Help Strategies. Respondents reported as helpful joining a support group (80.4%), doing physical exercises (79.9%), reading a self help book about the problem (75.8%), consulting a site that contains information about the problem (75.7%), finding expert for mental health (73%), therapy with a specialist (66.9%) and practicing relaxation training (64.6%).

Recognition of Knowledge and Skills for Support and First Aid. Twenty two point three percent (22.3%) of the respondents recognized that not valuing the problem and ignoring it was harmful, while (78.8%) reported that being aware of and attending to the problem was helpful. Of significance is that only (39.1%) of the respondents thought asking the vignette subject about suicidal tendencies was helpful.

Knowledge on How to Prevent Mental Disorders. Most respondents recognized that they would reduce the risks of developing a condition like that of the vignette if they avoided stressful situations (87.2%) and did not drink alcoholic beverages (83.8%) among other options. In addition, they identified that if the vignette subject wanted to, he could resolve his problem on his own (65.9%). In the same component, more than half reported that they had a family member or a close friend who had a similar condition to that of the vignette subject (59.2%) and that the person had received help (46.4%). In addition, 52% of the respondents were likely to agree with the statements that mental illnesses was cyclical; 60% would agree that mental illnesses require more time to be healed than other diseases; 42% that if one were to suffer from mental illness, it is because they did not get the care they should have had; and 46.4% that individuals that are diagnosed as mentally ill have symptoms throughout their lives (See Table 2 at the bottom).

Substance Use Literacy and Adherence to HIV Medication Disorder Recognition. There was a statistically significant association between adherence and reporting that the vignette subject did not have any problem (r = 0.081, P = 0.003) as well as reporting that the subject had Bulimia (r = 0.055, P = 0.008), with most of the respondents who reported these diagnoses having moderate adherence (85.7%, N=12 and 100% N=7 respectively).

Professional help and available treatment. Those who moderately adhered (42.8%) to medications were more likely to report that close friends would be their support (P = 0.05). Also noteworthy is that the willingness to seek help was significantly correlated with adherence (P = 0.013), with most respondents preferring a health care professional and having high adherence (50%). Vitamins were the only form of treatment that was significantly associated with adherence (P = 0.004) with the majority of respondents considering vitamins as useful/helpful having high adherence (43.2%).

Effectiveness of self help strategies component. Most respondents (80.4%)

considered joining a support group as useful/helpful and this was significantly associated with adherence (P = 0.043); also a majority of the respondents supporting this intervention had high adherence (42.4%). In addition, there was a significant association between adherence and doing physical exercises (P= 0.007), with most respondents recognizing the intervention as useful/helpful having high adherence (44.1%).

Knowledge and Skills that Provide Support and First Aid Component. "Not valuing his problem and ignoring it until he feels better" was significantly correlated with adherence (r = 0.107, P= 0.016). It should be noted that most respondents considered this option as harmful (53.1%) and most of them had moderate adherence (41.1%). There was a disturbingly low endorsement for the option of asking if the vignette subject had suicidal tendencies (39.1%).

Preventing mental disorders. Having had someone in the family or a friend who had gone through a situation similar to the vignette subject was significantly associated with treatment adherence (P= 0.036) with most respondents who had this experience having moderate adherence (44.3%). Most of the respondents who fully agreed with the statement "If Jorge wanted to, he would come out of this situation for me" had high adherence (42.3%, P= 0.029), while those who disagreed completely with the statement "Mental illnesses are cyclic" (P= 0.016) had high adherence (52.4%). Those who agreed completely with the statement "Mental illnesses required more time to treat" (P= 0.007) had moderate adherence (48.4%), while those who disagreed completely with the statement "If you suffer from mental illnesses it is because of the care that you didn't have" (P= 0.010) had high adherence (55.4%) (See Table 3 at the bottom).

Substance Use Literacy and Severity of Addiction

Disorder Recognition. There was a significant association between addiction severity and wrongly recognizing the disorder as nervous breakdown (P=0.008), where most of the respondents supporting this response had low addiction severity (r = -0.198).

Professional help and available treatment. Addiction severity was significantly associated with thinking that the medication would have side effects as a hindrance to seeking help (P= 0.028) and seeking a psychiatrist (P= 0.043). Of note is that respondents with low addiction severity were more likely to endorse the former (r = -0.164), while those with moderate addiction severity were likely to recognize a psychiatrist as neither helpful nor harmful (r = 0.156).

Knowledge and Skills that Provide Support and First Aid, and Preventing Mental Disorders. As would be expected, doing physical exercises, as well as having had someone who had a situation like that of the vignette subject, were both significantly associated with low addiction severity (r = -0.160, P= 0.049; r = -0.160, P= 0.049, respectively). Individuals with moderate addiction severity were more likely to agree with the statement that individuals with mental illness have symptoms in their entire life (r = 0.150, P = 0.047) (See Table 4 at the bottom).

DISCUSSION

The current study found that among HIV positive adults in Naivasha, substance

Table 2. Percentage Response on the Substance Use Literacy Components

Substance use literacy	Frequency/ Percent (N %)
Disorder Recognition Component	
Stress	90 (50.3%)
Depression	78 (43.6%)
Substance Abuse e.g. Alcohol	76 (42.5%)
Alcoholism	73 (40.8%)
Has a problem	59 (33.0%)
Mental illness	38 (21.2%)
Psychological/ Mental / Emotional Problems	31 (17.3%)
Don't know	24 (13.4%)
Nervous Breakdown	19 (10.6%)
Cancer	17 (9.5%)
Psychosis	16 (8.9%)
There is nothing wrong	14 (7.8%)
It's a crisis of her age	13 (7.3%)
Schizophrenia	8 (4.5%)
Bulimia	7 (3.9%)
Anorexia	7 (3.9%)
Professional Help & Available Treatment Component	
Seeking Help	
A Health Care Professional	66 (36.9%)
My Mother	58 (32.4%)
A Friend	35 (19.6%)
My Father	9 (5.0%)
A Teacher	5 (2.8%)
My Girlfriend/Boyfriend	3 (1.7%)
Other	2 (1.1%)
No Response	1 (0.6%)
Ease of Talking To Your Parents	
With The Mother	106(59.2%)
With The Father	62(34.6%)
My Parents Are Not Available	22(12.3%)
My Parents Are Not Aware Of These Issues	32(17.9%)
Do Not Know	13(7.3%)
My Parents Are Not Present	9(5.0%)
Other Reasons	6(3.4%)
Professional Help	
A Family Doctor	155 (86.6%)
A Psychologist	131 (73.2%)
A Psychiatrist	104 (58.1%)
A Close Family Member	149 (83.2%)
A Telephone Counselor	87 (48.6%)
A Social Worker	116 (64.8%)
What Could Prevent Asking For Help	
Think that the person will have a negative opinion about me	103 (57.5%)
Being very shy, ashamed	53 (29.6%)
Think that the person is likely to tell other people	84 (46.9%)
Think that the person doesn't value what I say	47 (26.3%)
Think that nothing could help me	44 (24.6%)
Think that you would know that I'm getting help from a health professional	43 (24.0%)

Table 2. Percentage Response on the Substance Use Literacy Components (Continued)

Think that a person can come to think about me	36 (20.1%)
Think that the treatment has side effects	32 (17.9%)
Thinking that I may have difficulty accessing this person/ health professional	24 (13.4%)
Other reasons	7 (3.9%)
Knowledge Of Helpful Drugs	
Vitamins	148 (87.7%)
Teas	71 (39.7%)
Antidepressant	53 (29.6%)
Antipsychotics	52 (29.1%)
Effectiveness of Self Help Strategies	
If The Respondents Will Seek Help If They Had A Similar Problem	
Yes	159 (88.8%)
No	12 (6.7%)
Do not Know	7 (3.9%)
Activities That Could Help	
Do Physical Exercise	143 (79.9%)
Join A Support Group For People With Similar Problems	144 (80.4%)
Doing Acupuncture	60 (33.5%)
Getting Up Early In The Morning	82 (45.8%)
Therapy With A Specialist	119 (66.5%)
Knowledge & Skills that Provide Support& First Aid to Others	
Options That Respondents Could Use	
Not Valuing His Problem, Ignoring It Until He Feels Better	40 (22.3%)
Tell Him Firmly To Go Forward	46 (25.7%)
Listen To His Problems Comprehensively	141 (78.8%)
Ask If He Has Suicidal Tendencies	70 (39.1%)
Encourage Him Exercise	113 (63.1%)
Knowledge on How to Prevent Mental Disorders	
Reducing Risks of Developing A Condition	
Practice Physical Exercise	140 (78.2%)
Avoid Situations That Cause Stress	156 (87.2%)
Practicing Relaxing Activities Regularly	119 (66.5%)
Personal Opinion On Situation	
If Jorge Wanted To, He Could Come out of This Situation For Me	118 (65.9%)
Personal Experience	
If Someone In Your Family/ Close Circle Of Friends In A Similar Situation	
Yes	106 (59.2%)
No	73 (40.8%)
Are They Receiving Any Help?	
Yes	83 (46.4%)
No	70 (39.1%)
No Response	26 (14.5%)
Respondents Opinions On Statements Regarding Mental Illness	
Mental Illnesses Are Cyclical	92 (52%)
Mental Illnesses Require More Time To Be Healed Than Other Diseases	108 (60%)
Drugs Are Effective In Improving The Symptoms In Mental Illness	100 (56%)
A Person With Mental Illness Is More Likely To Become A Criminal	83 (47%)
If You Were To Suffer From Mental Illness, It Is Because You Didn't Have The Care You Should Have Had	76 (42.5%)
Individuals That Are Diagnosed As Mentally Ill, Have Symptoms Throughout Their Lives	83 (46.4%)

Table 3. Summary Showing Significant Association between Substance Use Literacy and Treatment Adherence

Disorder Recognition Elements

Responses To What Is The Subject's Problem	Adherence to Treatment (P-value)-Chi-Square	Adherence to Treatment			Frequency
		Low Adherence	**Moderate Adherence**	**High Adherence**	
There's Nothing Wrong	0.003**	1 (7.1%)	12 (85.7%)	1 (7.1%)	14 (7.8%)
Bulimia	0.008**	0 (0.0%)	7 (100.0%)	0 (0.0%)	7 (3.9%)

Respondents Ability to Recognize Professional Help & Available Treatment

Help & Treatment Recognition Elements	Adherence to Treatment (P-value)-Chi-Square	Majority Response	Adherence to Treatment		
			Low Adherence	**Moderate Adherence**	**High Adherence**
Seeking Help	0.013**	My Mother	11 (18.97%)	24 (41.4%)	23 (39.7%)
		A Healthcare Professional	9 (13.6%)	24 (36.4%)	33 (50.0%)
Professional Help					
A Close Friend	0.050*	Useful/Helpful	22 (15.2%)	62 (42.8%)	61 (42.1%)
Knowledge of Drugs Available					
Vitamins	0.004**	Useful/Helpful	25 (16.9%)	59 (39.9%)	64 (43.2%)

Respondents Ability to Recognize Effectiveness of Self Help Strategies

	Treatment Adherence (P Value)-Chi-Square	Majority Response	Adherence to Treatment			Frequency
			Low Adherence	**Moderate Adherence**	**High Adherence**	
Activities That Could Help						
Do Physical Exercise	0.007*	Useful/Helpful	25 (17.5%)	55 (38.5%)	63 (44.1%)	143 (79.9%)
Join A Support Group For People With Similar Problems	0.043*	Useful/Helpful	23 (16.0%)	60 (41.7%)	61 (42.4%)	144 (80.4%)

Table 3. Summary Showing Significant Association between Substance Use Literacy and Treatment Adherence (Continued)

Respondents Ability to Recognize Knowledge & Skills That Provide Support and First Aid to Others

	Treatment Adherence (P Value)	Majority Response	Adherence to Treatment			Frequency
			Low Adherence	Moderate Adherence	High Adherence	
Options That Respondents Could Use						
Not Valuing His Problem, Ignoring It Until He Feels Better	0.016*	Harmful	18 (18.9%)	39 (41.1%)	38 (40.0%)	95 (53.1%)

Respondents Ability to Know How to Prevent Mental Disorders

	Treatment Adherence (P-Value)	Majority Response	Adherence to Treatment		
			Low Adherence	Moderate Adherence	High Adherence
Personal Opinion On Situation					
If Jorge Wanted To, He Could Come out of This Situation For Me	0.029*	I Fully Agree	15 (19.2%)	30 (38.5%)	33 (42.3%)
If Someone In Your Family/ Close Circle Of Friends In A Similar Situation					
	0.036*	Yes	25 (23.6%)	47 (44.3%)	34 (32.1%)
Respondents Opinions On Statements Regarding Mental Illness					
Mental Illnesses Are Cyclical	0.016*	I Disagree Completely	12 (19.0%)	18 (28.6%)	33 (52.4%)
Mental Illnesses Require More Time To Be Healed Than Other Diseases	0.007**	I Agree Completely	10 (16.1%)	30 (48.4%)	22 (35.5%)
If You Were To Suffer From Mental Illness, It Is Because You Didn't Have The Care You Should Have Had	0.010*	I Disagree Completely	10 (17.9%)	15 (26.8%)	31 (55.4%)

Table 4. Summary of Correlation between Substance Use Literacy & Severity of Addiction

1. Correlation Between Disorder Recognition Capabilities & Severity of Addiction		ASI Scores
Nervous Breakdown	P-Correlation	-.198**
	Sig. (2-tailed)	.008
	N	179
2. Correlation Between Recognition Of Professional Help & Available Treatment Element Of Substance Use Literacy & Severity of Addiction		ASI Scores
Think that the treatment has side effects	P-Correlation	-.164*
	Sig. (2-tailed)	.028
	N	179
A Psychiatrist	P-Correlation	.156*
	Sig. (2-tailed)	.043
	N	170
3. Correlation Between Recognition of Effectiveness of Self Help Strategies Elements Of The Substance Use Literacy & Addiction Severity Index		ASI Scores
Do Physical Exercise	P-Correlation	-.160*
	Sig. (2-tailed)	.049
	N	153
4. Correlation Between Knowledge & Skills To Provide Support First Aid To Others Element Of The Substance Use Literacy & Addiction Severity Index		ASI Scores
There was no significant correlation		
5. Correlation Between Knowledge of how to prevent Mental Disorders Element Of The Substance Use Literacy & Addiction Severity Index		ASI Scores
If Yes; Have They Received Any Help Or Treatment From Professionals Specializing In These Situations	P-Correlation	-.160*
	Sig. (2-tailed)	.049
	N	153
Individuals That Are Diagnosed As Mentally Ill, Have Symptoms Throughout Their Lives	P-Correlation	.150*
	Sig. (2-tailed)	.047
	N	177

use literacy was low. Despite a history of substance abuse and low substance use literacy rates, most of the respondents had no current addiction and had moderate adherence to HIV medication. The moderate adherence was especially found in cases where respondents identified psychosocial forms of substance use management such as physical exercises and support groups. Participants had low recognition and endorsement for professionals such as psychiatrists and psychologists, as well as medication such as antidepressants and antipsychotics; seeking help from a close friend and taking vitamins as medication were high and significantly associated with adherence. Surprisingly, correctly recognizing the alcohol use disorder in the vignette was not significantly associated with ad-

herence (r = 0.011, P = 0.977), but not recognizing that there was any problem significantly associated with adherence (r = 0.081, P= 0.003). Therefore, recognition of a problem is very important in adherence despite not knowing the exact nature of the problem. Of note is that having had a friend or family member who has had an alcohol use problem and had sought professional help was significantly associated with adherence. Low addiction severity was significantly correlated with few of the substance use literacy elements such as doing physical exercises and having had someone with an alcohol use problem. Doing physical exercises as part of the recognized effective self-help strategies was both significantly correlated with moderate adherence and low addiction severity. However, this does not mean that physical exercises are the only important strategies in increasing adherence and reducing addiction. This is because when it comes to perceived professional help, seeking a close friend is significantly correlated with moderate adherence while seeking a psychiatrist is significantly correlated with low addiction severity. This shows that substance use literacy, medical adherence and addiction severity are somewhat mutually inclusive.

An association between substance use and poor adherence to HIV medication has been found in many studies as was also evident in this study (Assefa et al., 2005; Nicholas et al., 2014). Moreover, the present results support previous reports that substance use literacy is low among substance users (Loureiro et al., 2013). However, the present results do not support findings by Lincoln et al. (2006),which found no significant association between severity of addiction and literacy. There are no studies that portray the relationship between substance use literacy, as defined in this research, and adherence to medical treatment. With this study, this relationship has been well defined.

Poor adherence is facilitated by lack of knowledge on how to identify whether or not there is a problem. Moderate adherence is evident among substance users who are unable to recognize professionals, treatment and skills that can aid management. Poor adherence is also due to lack of knowledge of self help skills that are vital in management; literacy on psychosocial forms of management is associated with moderate levels of Adherence. Illiteracy on prevention mechanisms is also associated with poor adherence.

The findings of this research imply that most substance users are well oriented to psychosocial forms of management. However, these only aid in acquiring moderate medication adherence, hence health outcomes continue to be low. Therefore, as part of HIV medication therapy, extensive psycho-education on recognition of substance use disorders; professional help and available treatment; effectiveness of self help strategies; knowledge and skills that provide support and first aid; as well as prevention of mental disorders should be incorporated. Moreover, this form of therapy should be tailored to severity of addiction.

CONCLUSION

Substance use literacy is a multidimensional construct whose components, whether in totality or individually, have a significant impact on medication adherence levels and addiction severity. This study lays a foundation for understanding

this relationship. Similar studies, including ones targeting substance use literacy as an intervention among substance users receiving HIV medication, will further illuminate the under workings of this relationship.

STUDY LIMITATIONS

The study was held in a clinical setting and hence results and implications may not be generalized to a community setting. In addition, the study reflects adherence to HIV medication and hence the findings may not be true for other forms of medication. However, the health outcomes of people with HIV are quite sensitive to any change in medication adherence. Moreover, the response options in the measure used to assess substance use literacy may not have captured all possible alternatives relevant to substance abuse treatment.

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